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X 1965 REPORT OF

# EGG PRODUCTION TESTS, UNITED STATES AND CANADA

- RANDOM SAMPLE EGG PRODUCTION TESTS,  
TWO-YEAR COMBINED SUMMARY, 1963-64 AND 1964-65;  
RANGE GROUP RANKINGS, 1964-65;  
STANDARD EGG LAYING TESTS, 1964-65 X



This publication is based upon recommendations of the National Committee on Random Sample Poultry Testing and the Council of American Official Poultry Tests. Information in the report was compiled by the Poultry Research Branch, Animal Husbandry Research Division, Agricultural Research Service, from data supplied by the Test Supervisors and the Council of American Official Poultry Tests. The statistical analysis for the Combined Summary was made by Biometrical Services, ARS. The publication of this report should not be construed as implying approval or endorsement by the U. S. Department of Agriculture of any of the stocks tested.

Egg Production Tests are designed to provide a reliable guide for poultrymen, hatcherymen, and breeders concerning the performance of stocks offered for sale by breeders and hatcherymen. This publication contains data on traits of economic importance compiled from results of all official Random Sample and Standard Egg Laying Tests in the United States and Canada.

The publication is divided into three separate categories: 1 - Two-Year Combined Summary of Random Sample Test data for the 1963-64 and 1964-65 test years; 2 - Range Group Ranking for the 1964-65 test year; 3 - Official Standard Egg Laying Test data for the 1964-65 test year. The first deals with data obtained from the 1963-64 and 1964-65 Random Sample Egg Production Tests. These data have been treated by acceptable statistical procedures and permit direct comparison of stocks that are entered in different tests. The second deals with the 1964-65 Random Sample Egg Production Test results and shows, by "range group rankings", the performance of each entry as compared to other entries in the same test. The third section concerns records compiled by stocks in the 1964-65 Official Standard Egg Laying Tests.

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Information on performance of stocks in Chicken Meat Production Tests can be secured by writing direct to the tests, as follows: Arkansas Meat Performance Egg Phase and Reproduction Test, Dept. of Animal Industry and Veterinary Science, University of Arkansas, Fayetteville, Arkansas; Maine Production and Broiler Test, Maine Dept. of Agriculture, Division of Animal Industry, State House, Augusta, Maine.

Information on performance of turkey stocks in Turkey Meat Production Tests can be secured by writing to the Poultry Research Branch, Animal Husbandry Research Division, Agricultural Research Center, Beltsville, Maryland 20705, and requesting publication ARS 44-13, Turkey Performance Tests.

- Alberta Random Sample Egg Production Test  
R. H. McMillan, Alberta Department of Agriculture, Edmonton
- Arizona Random Sample Test  
Ernest L. Parker, Arizona State University, Tempe 85281
- British Columbia Random Sample Egg Production Test, Abbotsford  
W. H. Pope, B. C. Department of Agriculture, Victoria
- California Official Random Sample Egg Laying Test  
Emery A. Johnson, Route 3, 2718 No. 99 Highway, Modesto 95351
- Central Random Sample Egg Production Test  
M. S. Mitchell, Poultry Division, Canada Department of Agriculture, Ottawa
- Florida Random Sample Test  
A. W. O'Steen, Chipley 32428
- Iowa Multiple Unit Poultry Test  
Elston P. Erickson, Iowa Poultry Association, National Plans Division Board,  
535 E. Lincolnway, Ames 50011
- Kansas Multiple Unit Test  
M. E. Jackson, Call Hall, Kansas State University, Manhattan 66504
- Minnesota Random Sample Egg Production Test, Stillwater and St. Cloud  
Robert E. Moehrle, Department of Agriculture, Dairy and Food, State Office Building,  
St. Paul 55101
- Missouri Official Random Sample Poultry Test  
Charles W. McElyea, Box 109, Mountain Grove 65711
- New Brunswick Random Sample Egg Production Test  
Bernard R. Bartlett, Department of Agriculture, Fredericton
- New Hampshire Multiple Unit Egg Production Test  
W. C. Skoglund, Department of Poultry Science, University of New Hampshire, Durham 03824
- New Jersey Random Sample Egg Laying Test  
John J. Dowling, Jr., Rutgers University, New Brunswick 08903
- Central New York Official Random Sample Poultry Test, Horseheads  
Dean R. Marble, Poultry Department, Cornell University, Ithaca 14850
- North Carolina Random Sample Egg Laying Test, Salisbury  
G. A. Martin, Poultry Extension Dept., North Carolina State University, Raleigh 27607
- Pennsylvania Random Sample Laying Test  
Paul J. Turek, Route 2, Harrisburg 17110
- Rhode Island Random Sample Laying Test  
L. T. Smith, University of Rhode Island, Kingston 02881
- Tennessee Random Sample Laying Test  
O. E. Goff, Poultry Department, University of Tennessee, Knoxville 37916
- Texas Random Sample Egg Production Test  
Bill H. Doran, Texas A & M University, College Station 77841
- Wisconsin Random Sample Egg Production Test, Oregon  
Arnold Guthrie, Department of Agriculture, 4802 Sheboygan Avenue, Madison 53702



## TWO-YEAR COMBINED SUMMARY

## INTRODUCTION

This summary includes the two-year combined results of the Random Sample Egg Production Tests conducted in the United States and Canada during 1963-64 and 1964-65. The entries in the various tests start with a random sample of hatching eggs or chicks of the stock being tested. The samples are drawn by prescribed methods to insure that each entry is typical of the stock it represents. All entries within a test are treated the same with respect to housing, feeding, management, and disease control with the objective of avoiding differences in performance due to environment.

All tests follow these basic principles in their operation. However, there are differences between tests and between years, including climatic conditions and other environmental factors, which affect the results. For this reason, direct comparison of the results of two stocks in different tests or different years may be misleading.

The primary purpose of this summary is the presentation of test results in a manner that will support sound evaluation of all stocks tested. To accomplish this, the results of all tests are combined, by stocks and by years, with adjustments by accepted statistical procedures for test and year differences and for variation in the amount of information per stock. The results of these computations are published as the regressed mean of each trait for each stock.

Errors of two kinds influence the results of even the most carefully designed and operated tests. The first kind of error is the chance deviation or unavoidable "sampling error" made when a small sample of eggs or chicks represents an entry. The other kind of error is due to uncontrolled or unknown environmental differences between entries that occur in spite of all efforts to treat all entries within a given test as nearly alike as possible. The differences between the results for two entries in a single test for a single year may be due to these chance variations rather than to a real difference in the performance capabilities of the two stocks. The effect of such errors in comparing stocks can be materially reduced by basing the comparisons on the combined results of several tests over two or more years. If all entries compared were entered in the same tests in both years, the simple averages could be compared directly without adjustment.

The performance data (regressed means) reported in this summary are derived from the results reported by the individual tests for each of the past two years. It is unlikely, however, that these means for any stock, even though entered in only one test each year, will coincide precisely with the two-year average performance data as published by the test. The variations are due to adjustments for test differences, year differences, the number of tests and years entered, and the number of replicates per test. These statistical adjustments allow predictions to be made of what the average performance would have been for each stock if all stocks had been entered in all tests each year.

The statistical treatment applied to the test data is designed to reduce the influence of non-genetic variations. However, this cannot be accomplished perfectly. Consequently, estimates or predictions of performance cannot be made with absolute precision. Reliable predictions, within prescribed limitations, can be made as to whether a difference in the reported performance of two stocks represents a real difference in their performance. These predictions involve the use of the confidence interval figures which have been computed for each trait or performance factor reported.

## HOW TO TELL WHETHER DIFFERENCES ARE REAL

The range of the confidence limits represents the amount of difference in the performance of two stocks that may be due to chance. If the confidence limits for two regressed means overlap, the two means are not significantly different at the 5% level. If the confidence limits for two regressed means do not overlap, the odds are at least 19 in 20 that a real difference exists in the performance of the two stocks.



All Stocks Entered, with Regressed Means and 80% Confidence Limits for each Trait

AGE AT 50% PRDUCTION (Days)		EGG PRODUCTION				INCOME DVER FEED AND CHICK COST (\$)		FEED PER POUND OF EGGS PRDUCTION (lbs.)		EGG WEIGHT (oz.)		LARGE AND EXTRA LARGE EGGS (%)		BODY, WEIGHT (lbs.)		STOCK CODE
		HEN HDUSED (No.)		HEN DAY (%)												
		RE- GRESSED MEAN	80%* CONF. LIMITS	RE- GRESSED MEAN	80%* CONF. LIMITS											
175	173	204	199	64.8	63.7	2.21	2.08	4.30	4.20	24.5	24.3	69.7	67.9	4.7	4.6	995
	177		209		65.9		2.34		4.40		24.7		71.5		4.8	
177	175	215	208	67.9	66.5	2.12	1.99	4.21	4.10	24.7	24.3	70.1	68.1	4.3	4.1	996
	179		222		69.3		2.25		4.32		25.1		72.1		4.5	
184	181	200	194	60.3	59.2	2.06	1.91	4.42	4.31	25.4	25.1	76.6	74.6	5.1	4.8	997
	187		206		61.4		2.21		4.53		25.7		78.6		5.4	
183	181	196	189	60.1	59.0	1.81	1.67	4.57	4.44	25.1	24.7	74.1	71.6	4.9	4.8	998
	185		203		61.2		1.95		4.70		25.5		76.6		5.0	
169	166	241	236	71.2	69.9	2.62	2.49	4.08	3.98	23.9	23.7	62.4	60.5	4.6	4.4	999
	172		246		72.5		2.75		4.18		24.1		64.3		4.8	

\* If the confidence limits for two regressed means overlap, the two means are not significantly different at the 5% level.

The use of the above data as a means of evaluating different stocks and traits can be illustrated as follows:

For the trait "Hen Housed Egg Production" the confidence limits for Stock 995 (199 to 209) do not overlap the confidence limits of Stock 999 (236 to 246). Therefore, the regressed means of these two stocks (204 and 241 eggs, respectively) are significantly different at the 5% level for this trait. However, when comparing Stock 995 with Stocks 996, 997, and 998, we find that the confidence limits of this stock (199 to 209) overlap the confidence limits of each of the other three stocks (208 to 222, 194 to 206, and 189 to 203, respectively). Thus the regressed mean of Stock 995 is not significantly different from the regressed means of Stocks 996, 997, and 998 for this trait.

Another example can be shown by using the trait "Feed Per Pound of Eggs Produced." Stock 995, with confidence limits of 4.20 to 4.40, is significantly more efficient for this trait than Stock 998 which has higher confidence limits (4.44 to 4.70) that do not overlap those of Stock 995. Likewise, when comparing Stock 995 with Stock 999 (confidence limits of 3.98 to 4.18) we find that these two sets of confidence limits do not overlap. However, in this example, Stock 995 is significantly less efficient than Stock 999 for this trait. In comparing Stock 995 with Stocks 996 and 997, we find that the confidence limits for all three of these stocks overlap and consequently these three stocks are not significantly different in this trait at the 5% level of probability.

The range of the confidence limits will not necessarily be the same for two different stocks that have the same regressed mean. The number of locations in which a stock is entered, the number of replicate pens per location, the number of years entered and the accuracy involved in adjusting for location and year effects all have a bearing on the range of the confidence limits for each individual regressed mean.

## EXPLANATION OF INCOME FIGURES

The "Income Over Feed and Chick Cost" figures reported in this summary represent the sales value of the eggs produced and of the hens at the end of the test minus the cost of the chicks and the feed used during the growing and laying periods. These figures may be useful in comparing the overall performance of stocks but they should not be considered as predictions of "profit" to be obtained under commercial operations. The "income" figures should be reduced by other costs, such as labor, building and equipment depreciation, vaccination, litter, interest, taxes and insurance, to approximate profits that might be expected under commercial conditions. Surveys conducted among commercial producers indicate that such costs may range from \$1.00 to \$2.00 per pullet housed.

Although the average chick price is reported for each stock, this value cannot be appropriately used to convert the "Income Over Feed and Chick Cost" figure to an income over feed cost figure. The average chick price shown is a simple unadjusted average of the prices reported by the entrant for his entries in the various tests and is not directly comparable to chick cost included in "Income Over Feed and Chick Cost."

## STOCKS SHOULD BE COMPARED FOR ALL TRAITS

In the use of this report for the evaluation of the overall performance of the various stocks, all traits should be considered. The values reported for "Income Over Feed and Chick Cost" represent a composite of several traits combined as determined by the economic conditions of the areas in which the tests are located. The conditions under which the stock is expected to perform in commercial production may differ from those prevailing at the tests and such differences should be taken into consideration. For example, a poultryman whose local market pays unusually good premiums for large and extra large eggs should place more emphasis on egg size in his evaluation of stock than those located in areas where such premiums are not available. The local market preference for brown or white shells should also be taken into account. Traits related to interior egg quality which affect the grade are of greatest importance in areas where prices are based on quality standards.

Each person should study his local needs and conditions and then place the appropriate emphasis on the performance traits that are of greatest importance to his own situation. A productive and profitable stock for one poultryman under one set of conditions may not fit the needs of another poultryman under a different set of conditions.

A brief explanation of the statistical procedures used in computing the regressed means and confidence limits may be found on pages 24 through 31.

## EXPLANATION OF TERMS AND ABBREVIATIONS

**Stock:** A term used to identify a specific breeding combination of chickens. These breeding combinations may include pure strains, strain crosses, breed crosses, incrossbreds, or combinations thereof.

Kind of	AW	Austra White	RIR	Rhode Island Red	BX	Crossbred
Stock:	BA	Black Australorp	RIW	Rhode Island White	IN	Incross
	BPR	Barred Plymouth Rock	WL	White Leghorn	INX	Incrossbred
	CG	California Gray	WPR	White Plymouth Rock	PS	Pure Strain
	LS	Light Sussex	WW	White Wyandotte	SX	Strain Cross
	NH	New Hampshire	Syn.	Synthetic	MSC	Multiple Synthetic Cross

<u>Trait</u>	<u>Definition</u>
Growing Mortality	Percent mortality to 150 days or subsequent age at housing.
Laying Mortality	Percent laying house mortality computed from 150 days or subsequent age at housing to end of test.
Age at 50% Production	Days of age to 50% production calculated from the first day of the first two consecutive days of 50% production for living birds in the entry at that time.
Hen-Housed Egg Production	Number of eggs per pullet housed calculated from date of housing until end of test.
Hen-Day Egg Production	Percent hen-day production from the time the birds reached 50% production to end of test.
Income Over Feed and Chick Cost	Income over feed and chick cost per pullet housed, with chick cost in 1,000 lots at hatch date adjusted for mortality (accidental deaths, sexing errors and missing chicks not included).
Feed per Pound of Eggs	Pounds of feed per pound of eggs produced, computed from bulk weighing of the eggs one day every two weeks or at least two days a month at equal intervals.
Egg Weight	Average annual egg weight computed from bulk weighings at least one day every two weeks or two days a month at equal intervals.
Large and Extra Large Eggs	Percent large and extra large eggs as determined by egg size distribution computed from all eggs laid one day each week.
Body Weight	Average weight of remaining birds at end of test.
Albumen Quality	Albumen quality, reported as Haugh units, measured on one day's eggs per quarter, at equal intervals, on a broken-out basis.
Large Blood Spots	Percentage of eggs with one or more large blood spots (1/8 inch or more), computed from at least three days' eggs per quarter, broken-out basis.
Small Blood Spots	Percentage of eggs with one or more small blood spots (less than 1/8 inch), computed from at least three days' eggs per quarter, broken-out basis.
Large Meat Spots	Percentage of eggs with one or more large colored meat spots (1/8 inch or more), computed from at least three days' eggs per quarter, broken-out basis.
Small Meat Spots	Percentage of eggs with one or more small colored meat spots (less than 1/8 inch), computed from at least three days' eggs per quarter, broken-out basis.
Specific Gravity Score	A score based on the specific gravity of the eggs measured. There is rather close correlation between the specific gravity and shell thickness of an egg. Therefore, the higher the specific gravity score, the thicker the egg shell. (When an egg floats in one of the sp. gr. solutions listed below, it is given the corresponding sp. gr. score. If it does not float in the 1.100 solution, it is given a nine score.)

<u>Specific Gravity Solution</u>	<u>Sp. Gr. Score</u>	<u>Specific Gravity Solution</u>	<u>Sp. Gr. Score</u>
1.068	0	1.088	5
1.072	1	1.092	6
1.076	2	1.096	7
1.080	3	1.100	8
1.084	4		

All tests, except Iowa, reported all 16 traits in both 1963-64 and 1964-65. The Income and Feed Conversion data were not recorded at the Iowa locations for either of these test years.

STOCK CODE	BREEDER'S NAME AND ADDRESS	BREEDING	STRAIN OR TRADENAME	NO. PENS	NO. LOCATIONS	AVG. CHICK PRICE (¢)	MORTALITY			
							GROWING (%)		LAYING (%)	
							RE-GRESSED MEAN	80%* CONF. LIMITS	RE-GRESSED MEAN	80%* CONF. LIMITS
578	Andrews, J. J. #3, Chilliwack, B. C.	WL	SX Andrews	8	2	34.0	3.2	3.0	8.4	7.2
145	Animal Research Institute Ottawa, Ontario	WL	PS Random Bred	9	2	40.0	3.5	3.3	15.6	14.0
570	Animal Research Institute Kentville, Nova Scotia	WL	PS Kentville R. B. C.	12	3	40.0	3.4	3.2	9.4	8.1
10	Anthony, Geo. M. & Sons Strausstown, Pennsylvania	WL	SX Anthony	20	7	38.4	3.3	3.0	11.3	9.9
138	Arbor Acres Farm, Inc. Glastonbury, Connecticut	WL	SX Queen	64	31	33.5	3.4	3.1	12.5	11.2
307	Babcock Poultry Farm, Inc. Ithaca, New York	WL	SX Babcock B-300	68	30	38.1	3.1	2.7	8.5	7.4
306	Babcock Poultry Farm, Inc. Ithaca, New York	CGxWL	BX Babcock B-370	20	9	36.7	3.0	2.7	8.2	7.0
20	Beamsdale Farm Lawndale, North Carolina	WL	SX Beamsdale 66	7	2	35.5	3.2	3.0	13.0	11.6
22	Booth Farms & Hatchery Clinton, Missouri		INX Booth Line 351	3	1	40.0	3.0	2.9	10.7	9.5
329	Booth Farms & Hatchery Clinton, Missouri		INX Booth Line 352	3	1	43.0	3.3	3.2	10.6	9.4
230	Brender's Leghorns Ferndale, New York	WL	SX Money Maker	22	11	38.2	3.1	2.8	11.1	9.7
361	Burling Hatchery Oxford, Pennsylvania	RIRxWR	BX Tri-Cross	1	1	32.0	3.4	3.3	10.3	9.5
593	Burpee, Arthur K. Woodstock, N. B.	WL	SX Burpee #43	2	1	32.0	3.3	3.1	10.6	9.5
544	Burpee, Arthur K. Woodstock, N. B.	WLx (RIRxLS)	Burpee #321	4	1	32.0	3.1	3.0	11.0	9.8
283	Cameron Leghorn Res. Farm Beaver Springs, Penna.	WL	SX Cameron #924	15	5	32.4	3.1	2.9	9.8	8.5
292	Carey Farms Marion, Ohio	WL	SX E. J. 's	7	4	39.5	3.5	3.3	9.5	8.2
31	Cashman Leghorn Farm Webster, Kentucky	WL	IN Hi-Cash	23	11	38.0	3.6	3.2	12.0	10.6
304	Cashman Leghorn Farm Webster, Kentucky	SYNxWL	INX Astronauts	5	3	41.0	3.3	3.1	9.6	8.4
367	Childers Hatchery Santa Ana, California		MSC EGGSecutive III	3	1	35.0	3.3	3.5	10.9	9.7
558	Clark, H. R. Burt's Corner, N. B.	WL	SX Clark's #57	8	2	35.0	3.5	3.3	8.7	7.5

\* If the confidence limits for two regressed means overlap, the two means are not significantly different at the 5% level.



AGE AT 50% PRODUCTION <i>(Days)</i>		EGG PRODUCTION				INCOME OVER FEEEO ANO CHICK COST <i>(\$)</i>		FEEEO PER POUNO OF EGGS PROOUEO <i>(lbs.)</i>		EGG WEIGHT <i>(oz.)</i>		LARGE AND EXTRA LARGE EGGS <i>(%)</i>		BODY WEIGHT <i>(lbs.)</i>		STOCK COOE
		HEN HOUSEO <i>(No.)</i>		HEN OAY <i>(%)</i>												
RE- GRESSED MEAN	80%* CONF. LIMITS	RE- GRESSED MEAN	80%* CONF. LIMITS	RE- GRESSED MEAN	80%* CONF. LIMITS	RE- GRESSED MEAN	80%* CONF. LIMITS	RE- GRESSED MEAN	80%* CONF. LIMITS	RE- GRESSED MEAN	80%* CONF. LIMITS	RE- GRESSED MEAN	80%* CONF. LIMITS	RE- GRESSED MEAN	80%* CONF. LIMITS	
178	174 182	224	217 231	70.2	68.6 71.8	1.89	1.74 2.04	2.88	2.79 2.97	24.8	24.5 25.1	68.4	65.6 71.2	4.6	4.3 4.9	578
182	178 186	194	187 201	65.4	63.9 66.9	1.04	.88 1.20	3.26	3.17 3.35	24.5	24.1 24.9	59.4	56.4 62.4	4.6	4.4 4.8	145
176	172 180	219	212 226	68.7	67.2 70.2	1.67	1.51 1.83	2.95	2.87 3.03	24.9	24.6 25.2	68.3	65.4 71.2	4.5	4.2 4.8	570
177	173 181	219	213 225	69.5	68.2 70.8	1.68	1.55 1.81	2.96	2.89 3.03	25.0	24.6 25.4	69.6	67.2 72.0	4.5	4.3 4.7	10
181	178 184	219	214 224	70.9	70.0 71.8	1.80	1.71 1.89	2.91	2.85 2.97	24.9	24.6 25.2	68.4	66.3 70.5	4.4	4.2 4.6	138
169	166 172	235	231 239	71.9	71.0 72.8	2.12	2.03 2.21	2.78	2.73 2.83	25.1	24.8 25.4	71.3	69.2 73.4	4.5	4.3 4.7	307
165	162 168	233	227 239	70.6	69.4 71.8	1.83	1.71 1.95	2.92	2.86 2.98	24.9	24.6 25.2	66.7	64.4 69.0	5.2	5.0 5.4	306
175	171 179	214	207 221	68.8	67.2 70.4	1.57	1.41 1.73	3.03	2.95 3.11	24.5	24.2 24.8	62.5	59.7 65.3	4.2	3.9 4.5	20
174	170 178	216	209 223	68.2	66.7 69.7	1.67	1.50 1.84	2.93	2.83 3.03	24.8	24.4 25.2	64.2	61.2 67.2	4.4	4.1 4.7	22
174	170 178	223	216 230	71.0	69.5 72.5	1.86	1.69 2.03	2.89	2.79 2.99	24.8	24.4 25.2	65.6	62.5 68.7	4.7	4.4 5.0	329
181	178 184	213	207 219	68.2	67.0 69.4	1.65	1.54 1.76	2.95	2.88 3.02	25.0	24.7 25.3	69.7	67.4 72.0	4.4	4.2 4.6	230
175	172 178	220	213 227	69.2	67.8 70.6	2.02	1.85 2.19	3.07	2.98 3.16	25.1	24.8 25.4	72.7	69.6 75.8	5.4	5.1 5.7	361
175	172 178	227	220 234	71.7	70.3 73.1	2.09	1.92 2.26	2.88	2.78 2.98	25.2	24.8 25.6	74.6	71.5 77.7	5.1	4.8 5.4	593
174	170 178	225	217 233	70.7	69.2 72.2	1.92	1.75 2.09	2.96	2.86 3.06	25.1	24.7 25.5	70.6	67.5 73.7	5.1	4.8 5.4	544
177	173 181	226	220 232	71.4	70.1 72.7	1.94	1.81 2.07	2.95	2.88 3.02	25.0	24.7 25.3	71.3	68.8 73.8	4.7	4.4 5.0	283
177	173 181	217	210 224	68.2	66.7 69.7	1.62	1.47 1.77	3.00	2.92 3.08	25.0	24.6 25.4	71.5	68.8 74.2	4.7	4.5 4.9	292
176	173 179	224	218 230	72.4	71.2 73.6	1.83	1.71 1.95	2.88	2.82 2.94	24.7	24.3 25.1	66.3	64.0 68.6	4.7	4.5 4.9	31
175	171 179	226	219 233	70.4	68.8 72.0	1.83	1.67 1.99	2.93	2.84 3.02	25.0	24.6 25.4	68.7	65.9 71.5	4.8	4.5 5.1	304
173	170 176	218	210 226	68.6	67.1 70.1	1.75	1.58 1.92	2.91	2.81 3.01	25.2	24.8 25.6	71.4	68.3 74.5	4.5	4.2 4.8	367
180	177 183	228	221 235	71.8	70.3 73.3	2.05	1.89 2.21	2.83	2.74 2.92	24.9	24.5 25.3	69.9	67.0 72.8	4.6	4.4 4.8	558

\* If the confidence limits for two regressed means overlap, the two means are not significantly different at the 5% level.

STOCK CODE	BREEDER'S NAME AND ADDRESS	BREEDING	STRAIN OR TRADENAME	NO. PENS NO. LOCATIONS	AVG. CHICK PRICE (¢)	MORTALITY			
						GROWING (%)		LAYING (%)	
						RE- GRESSED MEAN	80%* CONF. LIMITS	RE- GRESSED MEAN	80%* CONF. LIMITS
508	Clark's Poultry Farm Brandon, Manitoba	RIRx (LSxRIR)	Paymaster 101	10 3	30.5	3.0	2.8 3.3	10.6	9.2 12.0
330	Colonial Poultry Farms, Inc. Pleasant Hill, Missouri	INX	True-Line #142	3 1	38.0	3.3	3.2 3.5	10.8	9.6 12.0
364	Colonial Poultry Farms, Inc. Pleasant Hill, Missouri	BK	True-Line SL-280	4 4	37.0	3.5	3.3 3.7	12.0	10.7 13.4
289	Colonial Poultry Farms Pleasant Hill, Missouri	WL IN	True-Line 365B	26 13	38.5	3.2	2.9 3.5	11.4	10.0 12.8
309	Davis, Joe K., Hatchery Earl, North Carolina	RIRxBPR BX	Davis Combiner	21 9	34.0	2.9	2.6 3.2	9.1	7.9 10.4
48	DeKalb Agricultural Assoc. Sycamore, Illinois	INX	DeKalb 131	44 18	51.5	3.0	2.7 3.3	9.8	8.5 11.1
277	DeKalb Agricultural Assoc. Sycamore, Illinois	INX	DeKalb 151	36 19	48.8	3.4	3.1 3.8	9.1	7.9 10.4
310	Demler Farms Anaheim, California	WL SX	Demler Regal	45 19	32.9	3.1	2.8 3.5	11.7	10.3 13.0
346	Demler Farms Anaheim, California	SynxWL BX	Demler Royal	12 5	30.0	3.1	2.8 3.3	10.6	9.3 12.1
514	deZeeuw Leghorn Breeder South Edmonton, Alberta	WL SX	deZeeuw 752	6 2	36.0	3.2	3.0 3.4	8.4	7.3 9.7
592	deZeeuw Leghorn Breeder South Edmonton, Alberta	WL SX	deZeeuw 752B	6 3	36.0	3.4	3.2 3.7	8.3	7.2 9.5
363	Eckert, Dr. B. K. Yavneh Post Hof Ashdod, Israel	WL SX	Yavneh, Israel	2 1	45.0	3.3	3.1 3.4	8.2	7.3 9.2
350	Erath Egg Farm Stephenville, Texas	INX	Erath Mestiza	3 2	35.0	3.3	3.1 3.4	10.8	9.6 12.1
311	Evans, W. D. Hatchery, Ltd. Northampton, England	WL SX	Maxilay	12 5	47.0	3.5	3.2 3.8	10.8	9.4 12.2
518	Fisher Poultry Farm Ayton, Ontario	WL SX	Fisher 103	14 4	35.0	3.2	3.0 3.5	10.7	9.4 12.2
580	Fisher Poultry Farm, Ltd. Ayton, Ontario	WLxWW BX	Fisher 303	4 1	36.0	3.4	3.2 3.6	10.7	9.5 12.0
246	Forsgate Farms Jamesburg, New Jersey	WL SX	F 160	4 2	36.0	3.2	3.0 3.4	7.9	6.8 9.1
368	Fox Den Farms Cary, North Carolina	RIR SX	Little Red Hen	2 1	34.0	3.3	3.1 3.4	9.9	8.9 10.9
66	Garber Poultry Breeding Fm. Modesto, California	WL SX	G 200	24 10	32.8	3.1	2.8 3.4	9.6	8.4 11.0
65	Garber Poultry Breeding Fm. Modesto, California	CGxWL BX	G x 291	14 4	30.5	3.4	3.1 3.6	9.2	7.9 10.6

\* If the confidence limits for two regressed means overlap, the two means are not significantly different at the 5% level.

AGE AT 50% PRODUCTION (Days)		EGG PRODUCTION				INCOME OVER FEED AND CHICK COST (%)		FEED PER POUND OF EGGS PRODUCED (lbs.)		EGG WEIGHT (oz.)		LARGE AND EXTRA LARGE EGGS (%)		BODY WEIGHT (lbs.)		STOCK CODE
		HEN HOUSED (No.)		HEN DAY (%)												
RE- GRESSED MEAN	80%* CONF. LIMITS	RE- GRESSED MEAN	80%* CONF. LIMITS	RE- GRESSED MEAN	80%* CONF. LIMITS	RE- GRESSED MEAN	80%* CONF. LIMITS	RE- GRESSED MEAN	80%* CONF. LIMITS	RE- GRESSED MEAN	80%* CONF. LIMITS	RE- GRESSED MEAN	80%* CONF. LIMITS	RE- GRESSED MEAN	80%* CONF. LIMITS	
176	173 179	217	210 224	69.0	67.5 70.5	1.69	1.54 1.84	3.16	3.08 3.24	25.1	24.7 25.5	70.3	67.5 73.1	5.9	5.6 6.2	508
172	168 176	222	215 229	69.4	67.9 70.9	1.78	1.61 1.95	2.91	2.81 3.01	24.8	24.5 25.1	66.0	62.9 69.1	4.6	4.3 4.9	330
176	172 180	210	203 217	66.7	65.2 68.2	1.36	1.19 1.53	3.34	3.26 3.42	24.9	24.5 25.3	64.5	61.6 67.4	6.0	5.7 6.3	364
169	166 172	220	215 225	69.0	67.8 70.2	1.65	1.54 1.76	2.91	2.85 2.97	24.5	24.1 24.9	62.1	59.8 64.4	4.4	4.2 4.6	289
175	171 179	222	217 227	69.0	67.8 70.2	1.87	1.75 1.99	3.13	3.06 3.20	25.7	25.4 26.0	76.8	74.4 79.2	6.1	5.8 6.4	309
171	167 175	223	218 228	69.3	68.2 70.4	1.84	1.73 1.95	2.75	2.69 2.81	25.0	24.6 25.4	69.7	67.4 72.0	4.3	4.1 4.5	48
174	171 177	223	217 229	69.4	68.3 70.5	1.78	1.68 1.88	2.82	2.76 2.88	25.2	24.8 25.6	71.8	69.6 74.0	4.3	4.1 4.5	277
173	170 176	213	207 219	67.1	66.1 68.1	1.67	1.57 1.77	2.95	2.89 3.01	24.7	24.4 25.0	66.4	64.2 68.6	4.4	4.2 4.6	310
171	167 175	220	213 227	68.9	67.5 70.3	1.78	1.64 1.92	2.90	2.82 2.98	25.0	24.7 25.3	69.2	66.6 71.8	4.6	4.3 4.9	346
177	174 180	219	212 226	69.3	67.7 70.9	1.82	1.66 1.98	2.89	2.80 2.98	24.9	24.6 25.2	68.5	65.6 71.4	4.4	4.1 4.7	514
178	174 182	225	218 232	70.1	68.6 71.6	1.91	1.75 2.07	2.85	2.76 2.94	24.8	24.4 25.2	67.1	64.2 70.0	4.6	4.4 4.8	592
175	171 179	223	216 230	68.6	67.1 70.1	1.74	1.56 1.92	2.89	2.80 2.98	24.8	24.5 25.1	66.3	63.2 69.4	4.6	4.3 4.9	363
169	165 173	231	224 238	72.0	70.4 73.6	2.04	1.88 2.20	2.76	2.66 2.86	24.8	24.5 25.1	66.1	63.1 69.1	4.7	4.4 5.0	350
180	176 184	224	217 231	71.1	69.7 72.5	1.78	1.64 1.92	2.80	2.72 2.88	24.6	24.2 25.0	65.0	62.4 67.6	4.3	4.1 4.5	311
177	173 181	218	211 225	69.5	68.1 70.9	1.76	1.62 1.90	2.89	2.81 2.97	25.1	24.7 25.5	71.4	68.7 74.1	4.2	4.0 4.4	518
171	167 175	217	210 224	67.9	66.4 69.4	1.68	1.51 1.85	3.04	2.94 3.14	25.0	24.7 25.3	69.3	66.2 72.4	5.1	4.8 5.4	580
182	179 185	220	213 227	69.4	67.9 70.9	1.87	1.71 2.03	2.92	2.83 3.01	25.1	24.7 25.5	72.3	69.4 75.2	4.4	4.2 4.6	246
177	173 181	215	208 222	67.2	65.7 68.7	1.66	1.49 1.83	2.97	2.87 3.07	25.0	24.7 25.3	69.1	66.0 72.2	4.6	4.3 4.9	368
176	173 179	224	218 230	70.7	69.5 71.9	1.93	1.81 2.05	2.88	2.81 2.95	25.2	24.9 25.5	74.0	71.7 76.3	4.6	4.4 4.8	66
169	166 172	228	221 235	70.2	68.9 71.5	1.94	1.80 2.08	2.88	2.80 2.96	25.3	24.9 25.7	72.2	69.6 74.8	5.1	4.9 5.3	65

\* If the confidence limits for two regressed means overlap, the two means are not significantly different at the 5% level.



STOCK CODE	BREEDER'S NAME AND ADDRESS	BREEDING	STRAIN OR TRADENAME	NO. PENS NO. LOCATIONS	AVG. CHICK PRICE (¢)	MORTALITY			
						GROWING (%)		LAYING (%)	
						RE- GRESSED MEAN	80%* CONF. LIMITS	RE- GRESSED MEAN	80%* CONF. LIMITS
506	Gardiner, D. Cloverdale, B. C.	WLx (WLxBA)	Kanaka White	14 4	30.0	3.4	3.1 3.7	14.9	13.3 16.5
571	Gardiner, D. Cloverdale, B. C.	WLx (WLxBA)	Monarch	10 3	30.0	3.2	2.9 3.4	12.3	10.9 13.9
69	Garrison, Earl W. Bridgeton, New Jersey	RIRxWR BX	Golden Sex Link	6 5	31.0	3.4	3.2 3.6	9.4	8.1 10.7
70	Gasson's Poultry Farm Versailles, Ohio	WL SX	G 33	6 2	42.5	3.2	3.0 3.5	9.2	8.0 10.5
72	Ghostley's Poultry Farm Anoka, Minnesota	WL SX	Ghostley Pearl	12 8	39.0	3.8	3.5 4.0	12.2	10.8 13.8
338	Ghostley's Poultry Farm Anoka, Minnesota	WL SX	Ghostley Pearl 63	65 31	43.8	3.2	2.9 3.5	11.6	10.4 13.0
366	Goertz & Kruger Poultry Fm. Dinuba, California	WL SX	White Leghorn	3 1	25.0	3.2	3.1 3.4	10.7	9.5 11.9
567	Graton, A. Two Mountains, Quebec	WL SX	Oka 93	4 1	43.0	3.5	3.3 3.7	10.5	9.3 11.7
80	Hansen's Leghorn City Puyallup, Washington	WL SX	Criss Cross H 25	17 6	34.6	3.2	2.9 3.5	8.2	7.0 9.5
322	Hanson, J. A. & Son Corvallis, Oregon	WL SX	Super Nick A	4 3	36.3	3.3	3.1 3.5	12.2	10.9 13.6
337	Harco Orchards & Poult. Fm. So. Easton, Massachusetts	RIR PS	Group I	11 6	40.0	3.6	3.3 3.9	8.1	6.9 9.4
225	Harco Orchards & Poult. Fm. So. Easton, Massachusetts	RIR x BPR BX	Sex Link	20 10	40.3	2.8	2.5 3.0	8.6	7.4 9.9
86	Hardy, C. Nelson & Son Essex, Massachusetts	RIR x BPR BX	Sex Link	7 5	34.0	3.1	2.8 3.3	10.5	9.2 11.9
88	Heisdorf & Nelson Farms Kirkland, Washington	WL SX	Nick Chick	80 28	37.8	3.0	2.7 3.3	8.9	7.8 10.1
275	Heisdorf & Nelson Farms Kirkland, Washington	Syn x WL BX	Breed Cross	5 1	30.0	3.3	3.1 3.5	10.7	9.5 12.1
316	Heisey Leghorn Farms Mt. Joy, Pennsylvania	WL SX	H-K-Cross	2 1	30.0	3.3	3.1 3.4	10.9	9.8 12.0
92	Honegger Breeder Hatchery Forrest, Illinois	WL SX	Honegger Layer	41 14	41.0	3.2	2.9 3.5	9.2	8.0 10.5
321	Honegger Breeder Hatchery Forrest, Illinois	Syn x WL BX	Honegger H-80	14 8	43.0	3.1	2.8 3.4	10.4	9.1 11.8
276	Hubbard Farms Walpole, New Hampshire	Syn x NH BX	Comet	15 9	35.0	3.1	2.8 3.4	9.6	8.3 11.0
360	Hy-Line Poultry Farms Des Moines, Iowa	INX	Hy-Line 934-D	27 15	50.9	3.2	2.9 3.5	10.6	9.2 12.0

\* If the confidence limits for two regressed means overlap, the two means are not significantly different at the 5% level.

AGE AT 50% PRODUCTION (Days)		EGG PRODUCTION				INCOME OVER FEED AND CHICK COST (%)		FEED PER POUND OF EGGS PRODUCED (lbs.)		EGG WEIGHT (oz.)		LARGE AND EXTRA LARGE EGGS (%)		BODY WEIGHT (lbs.)		STOCK CODE
		HEN HOUSED (No.)		HEN DAY (%)												
RE- GRESSED MEAN	80%* CONF. LIMITS	RE- GRESSED MEAN	80%* CONF. LIMITS	RE- GRESSED MEAN	80%* CONF. LIMITS	RE- GRESSED MEAN	80%* CONF. LIMITS	RE- GRESSED MEAN	80%* CONF. LIMITS	RE- GRESSED MEAN	80%* CONF. LIMITS	RE- GRESSED MEAN	80%* CONF. LIMITS	RE- GRESSED MEAN	80%* CONF. LIMITS	
177	174 180	205	199 211	67.9	66.5 69.3	1.58	1.44 1.72	3.02	2.94 3.10	25.2	24.8 25.6	70.9	68.3 73.5	4.9	4.7 5.1	506
177	173 181	205	198 212	66.5	65.0 68.0	1.46	1.31 1.61	3.11	3.03 3.19	24.9	24.5 25.3	68.0	65.2 70.8	4.6	4.3 4.9	571
178	174 182	217	210 224	67.9	66.4 69.4	1.87	1.72 2.02	3.15	3.07 3.23	25.9	25.5 26.3	78.8	76.1 81.5	6.6	6.4 6.8	69
176	172 180	226	219 233	70.6	69.0 72.2	1.87	1.71 2.03	2.89	2.80 2.98	24.8	24.4 25.2	67.6	64.7 70.5	4.3	4.0 4.6	70
180	176 184	213	207 219	69.5	68.1 70.9	1.55	1.42 1.68	3.00	2.93 3.07	25.0	24.6 25.4	70.8	68.2 73.4	4.6	4.4 4.8	72
171	168 174	226	221 231	70.9	70.0 71.8	1.75	1.65 1.85	2.92	2.87 2.97	25.2	24.8 25.6	72.1	70.1 74.1	4.6	4.4 4.8	338
175	171 179	224	217 231	69.7	68.2 71.2	1.94	1.77 2.11	2.88	2.78 2.98	25.1	24.7 25.5	70.3	67.2 73.4	4.5	4.1 4.9	366
177	174 180	217	210 224	69.2	67.7 70.7	1.73	1.56 1.90	2.92	2.82 3.02	25.1	24.8 25.4	73.3	70.2 76.4	4.6	4.3 4.9	567
177	173 181	220	214 226	68.2	66.9 69.5	1.76	1.64 1.88	2.93	2.86 3.00	24.8	24.5 25.1	68.4	66.0 70.8	4.5	4.3 4.7	80
174	170 178	211	204 218	68.2	66.6 69.8	1.48	1.32 1.64	3.01	2.92 3.10	24.5	24.2 24.8	60.2	57.2 63.2	4.4	4.2 4.6	322
184	181 187	221	215 227	68.7	67.3 70.1	1.80	1.66 1.94	3.10	3.03 3.17	25.3	24.9 25.7	74.1	71.5 76.7	5.8	5.6 6.0	337
174	171 177	231	225 237	71.8	70.6 73.0	2.15	2.03 2.27	3.04	2.98 3.10	26.3	26.0 26.6	82.9	80.5 85.3	6.1	5.9 6.3	225
177	174 180	213	206 220	67.0	65.6 68.4	1.75	1.60 1.90	3.18	3.10 3.26	25.8	25.5 26.1	79.0	76.4 81.6	6.4	6.1 6.7	86
173	170 176	225	220 230	69.3	68.4 70.2	1.86	1.76 1.96	2.91	2.85 2.97	25.0	24.6 25.4	69.4	67.3 71.5	4.5	4.3 4.7	88
173	169 177	222	215 229	70.2	68.6 71.8	1.84	1.67 2.01	2.88	2.79 2.97	25.1	24.7 25.5	70.4	67.3 73.5	5.1	4.8 5.4	275
175	171 179	216	209 223	68.2	66.7 69.7	1.68	1.51 1.85	2.99	2.89 3.09	25.0	24.7 25.3	70.5	67.4 73.6	4.5	4.2 4.8	316
173	169 177	229	224 234	70.9	69.7 72.1	1.93	1.82 2.04	2.84	2.78 2.90	24.9	24.5 25.3	69.1	66.8 71.4	4.5	4.3 4.7	92
170	167 173	231	225 237	71.9	70.6 73.2	1.83	1.70 1.96	2.86	2.80 2.92	24.9	24.6 25.2	67.2	64.8 69.6	5.1	4.9 5.3	321
173	170 176	228	222 234	71.0	69.7 72.3	2.07	1.95 2.19	2.97	2.90 3.04	25.0	24.7 25.3	67.5	65.1 69.9	5.3	5.1 5.5	276
174	171 177	220	214 226	69.0	67.8 70.2	1.72	1.60 1.84	2.86	2.79 2.93	25.4	25.0 25.8	74.3	71.7 76.9	4.1	3.9 4.3	360

\* If the confidence limits for two regressed means overlap, the two means are not significantly different at the 5% level.

STOCK CODE	BREEDER'S NAME AND ADDRESS	BREEDING	STRAIN OR TRADENAME	NO. PENS — NO. LOCATIONS	AVG. CHICK PRICE  (¢)	MORTALITY			
						GROWING (%)		LAYING (%)	
						RE- GRESSED MEAN	80%* CONF. LIMITS	RE- GRESSED MEAN	80%* CONF. LIMITS
240	Hy-Line Poultry Farm Des Moines, Iowa	INX	Hy-Line 934-H	58 30	49.6	2.6	2.3 2.9	7.2	6.2 8.4
356	Ideal Poultry Breeding Farm Cameron, Texas	Syn x WL BX	Ideal 236	6 4	38.7	3.2	3.0 3.4	10.0	8.7 11.3
340	Ideal Poultry Breeding Farm Cameron, Texas	WL SX	H-3-W-2	52 21	39.1	3.7	3.3 4.0	11.4	10.1 12.7
108	Kerr, Dr., Hatcheries Minneota, Minnesota	WL IN	Kerr's 409 C	8 2	45.5	3.1	2.9 3.4	10.4	9.1 11.8
341	Kerr, Dr., Hatcheries Minneota, Minnesota	INX	P-K 26	6 3	49.0	3.1	2.9 3.4	9.6	8.3 10.9
109	Keystone Poultry Br. Farm Terre Hill, Pennsylvania	WL SX	Park's Keystone	3 3	38.0	3.2	3.0 3.3	9.9	8.8 11.2
352	Keystone Poultry Br. Farm Terre Hill, Pennsylvania	WL SX	Keystone B-1	4 3	38.0	3.1	2.9 3.3	10.2	8.9 11.4
359	Keystone Poultry Br. Farm Terre Hill, Pennsylvania	WL SX	K-1700	1 1	20.0	3.2	3.1 3.3	9.5	8.7 10.3
110	Kimber Farms, Inc. Fremont, California	WL SX	Kimber K 137	80 32	41.5	2.7	2.5 3.1	8.8	7.7 10.0
111	Kimber Farms, Inc. Fremont, California	WL SX	Kimber K 141	5 1	34.0	3.0	2.9 3.2	8.4	7.2 9.6
112	Kimber Farms, Inc. Fremont, California	WL SX	Kimber K 155	17 9	40.2	3.1	2.8 3.4	9.2	7.9 10.5
365	Kimber Farms, Inc. Fremont, California	BX	Kimber K 188	4 4	37.0	3.4	3.2 3.6	12.2	10.9 13.5
347	Kimber Farms, Inc. Fremont, California	Syn x WL BX	Kimber K 222	5 2	46.0	3.2	3.0 3.4	10.4	9.1 11.8
344	Kingstowne Poultry Farm N. Kingston, R. I.	RIRxWR BX	Buff Sex Link	3 1	34.0	3.2	3.1 3.4	9.7	8.6 10.9
227	Klongland Hatchery Stoughton, Wisconsin	CGxWL BX	K Cross	3 1	37.0	3.3	3.2 3.5	9.3	8.2 10.5
116	Lawton, A. C. & Sons Foxboro, Massachusetts	WPR PS	Lawton	1 1	37.0	3.3	3.2 3.4	9.8	9.0 10.7
117	Lawton, A. C. & Sons Foxboro, Massachusetts	RIRxWPR BX	Buff Sex Link	17 9	35.4	2.9	2.6 3.2	7.2	6.1 8.4
576	Manitoba Dairy & Poul. Coop Winnipeg, Manitoba	WL SX	Keyline 110 C	10 4	36.5	3.2	3.0 3.4	11.0	9.7 12.5
595	Manitoba Dairy & Poul. Coop Winnipeg, Manitoba	LSxRIR BX	Keyline 340	2 1	27.0	3.4	3.3 3.5	11.0	9.9 12.1
598	Nelson, George F. Truro, Nova Scotia	RIR(LSxRIR) BX	Sex Link	4 2	27.5	3.3	3.1 3.5	11.5	10.2 12.8

\* If the confidence limits for two regressed means overlap, the two means are not significantly different at the 5% level.

AGE AT 50% PRODUCTION (Days)		EGG PRODUCTION				INCOME OVER FEED AND CHICK COST (%)		FEED PER POUND OF EGGS PRODUCED (lbs.)		EGG WEIGHT (oz.)		LARGE AND EXTRA LARGE EGGS (%)		BODY WEIGHT (lbs.)		STOCK CODE
		HEN HOUSED (No.)		HEN DAY (%)												
RE- GRESSED MEAN	80%* CONF. LIMITS	RE- GRESSED MEAN	80%* CONF. LIMITS	RE- GRESSED MEAN	80%* CONF. LIMITS	RE- GRESSED MEAN	80%* CONF. LIMITS	RE- GRESSED MEAN	80%* CONF. LIMITS	RE- GRESSED MEAN	80%* CONF. LIMITS	RE- GRESSED MEAN	80%* CONF. LIMITS	RE- GRESSED MEAN	80%* CONF. LIMITS	
173	170 176	237	232 242	73.2	72.2 74.2	2.14	2.04 2.24	2.71	2.65 2.77	25.2	24.8 25.6	72.2	70.1 74.3	4.2	4.0 4.4	240
173	169 177	229	222 236	71.7	70.2 73.2	1.99	1.83 2.15	2.83	2.75 2.91	25.0	24.6 25.4	69.6	66.8 72.4	4.7	4.5 4.9	356
177	174 180	213	208 218	68.2	67.2 69.2	1.70	1.59 1.81	2.94	2.89 2.99	25.1	24.8 25.4	72.1	70.0 74.2	4.3	4.2 4.4	340
173	169 177	223	216 230	69.9	68.4 71.4	1.69	1.54 1.84	2.95	2.86 3.04	25.3	24.9 25.7	72.2	69.4 75.0	4.9	4.6 5.2	108
174	170 178	223	216 230	69.0	67.5 70.5	1.75	1.59 1.91	2.95	2.87 3.03	25.2	24.8 25.6	71.8	69.0 74.6	4.8	4.5 5.1	341
173	169 177	227	220 234	71.1	69.5 72.7	2.05	1.88 2.22	2.85	2.76 2.94	25.2	24.9 25.5	73.8	70.9 76.7	4.6	4.3 4.9	109
173	169 177	223	216 230	69.5	67.9 71.1	1.83	1.67 1.99	2.96	2.87 3.05	25.1	24.7 25.5	71.0	68.0 74.0	4.7	4.4 5.0	352
175	172 178	225	219 231	70.2	68.9 71.5	2.00	1.84 2.16	2.87	2.77 2.97	25.2	24.8 25.6	71.1	68.1 74.1	4.4	4.1 4.7	359
171	168 174	228	223 233	70.3	69.4 71.2	1.93	1.83 2.03	2.83	2.78 2.88	25.0	24.7 25.3	71.1	69.1 73.1	4.4	4.2 4.6	110
173	169 177	224	217 231	69.5	67.9 71.1	1.90	1.73 2.07	2.89	2.79 2.99	25.0	24.6 25.4	69.6	66.5 72.7	4.6	4.3 4.9	111
170	167 173	229	223 235	70.8	69.6 72.0	1.89	1.77 2.01	2.88	2.82 2.94	24.9	24.5 25.3	68.2	65.8 70.6	4.6	4.4 4.8	112
176	172 180	209	202 216	66.4	64.9 67.9	1.52	1.36 1.68	3.20	3.11 3.29	25.2	24.8 25.6	69.7	66.8 72.6	5.3	5.0 5.6	365
171	168 174	225	218 232	70.2	68.7 71.7	1.79	1.63 1.95	2.87	2.78 2.96	25.1	24.8 25.4	68.9	66.0 71.8	4.9	4.7 5.1	347
176	172 180	208	201 215	65.8	64.3 67.3	1.32	1.15 1.49	3.26	3.16 3.36	25.0	24.7 25.3	70.3	67.2 73.4	6.2	5.9 6.5	344
172	168 176	227	220 234	69.4	67.9 70.9	1.90	1.73 2.07	2.89	2.79 2.99	25.2	24.8 25.6	71.2	68.2 74.2	5.2	4.9 5.5	227
174	171 177	218	212 224	68.6	67.3 69.9	1.75	1.58 1.92	3.00	2.91 3.09	24.9	24.6 25.2	68.5	65.4 71.6	5.5	5.1 5.9	116
181	177 185	221	215 227	68.9	67.6 70.2	1.96	1.84 2.08	3.16	3.09 3.23	26.3	26.0 26.6	83.2	80.8 85.6	6.1	5.9 6.3	117
173	169 177	218	211 225	68.5	67.1 69.9	1.74	1.59 1.89	2.92	2.84 3.00	24.9	24.5 25.3	67.2	64.5 69.9	4.8	4.5 5.1	576
171	168 174	223	216 230	69.4	68.0 70.8	1.76	1.59 1.93	3.14	3.04 3.24	24.8	24.5 25.1	66.3	63.2 69.4	6.0	5.7 6.3	595
174	170 178	218	210 226	68.6	67.1 70.1	1.77	1.61 1.93	3.04	2.95 3.13	25.1	24.7 25.5	70.9	67.9 73.9	5.4	5.1 5.7	598

\* If the confidence limits for two regressed means overlap, the two means are not significantly different at the 5% level.



STOCK CODE	BREEDER'S NAME AND ADDRESS	BREEDING	STRAIN OR TRADENAME	NO. PENS NO. LOCATIONS	AVG. CHICK PRICE (\$)	MORTALITY			
						GROWING (%)		LAYING (%)	
						RE- GRESSED MEAN	80%* CONF. LIMITS	RE- GRESSED MEAN	80%* CONF. LIMITS
526	Noble Bros. Orangeville, Ontario	WL	Noble N-60	4	33.0	3.1	3.0 3.3	10.4	9.2 11.7
37	No. Cent. Reg. Plty. Br. Lab. Lafayette, Indiana	SX		1					
37	No. Cent. Reg. Plty. Br. Lab. Lafayette, Indiana	WL	Reg. Cornell Contr.	28	41.4	3.9	3.6 4.3	13.3	11.8 14.8
		PS		10					
257	No. Cent. Reg. Plty. Br. Lab. Lafayette, Indiana	RIR	Reg. Red Control	3	35.0	3.2	3.0 3.3	11.1	10.0 12.4
		PS		1					
157	No. Cent. Reg. Plty. Br. Lab. Lafayette, Indiana	RIRxWL	Reg. Red x Cornell	4	42.0	3.4	3.2 3.6	10.2	9.0 11.4
		BX		1					
370	Oak Crest Hatcheries, Inc. Oak Crest, Florida	RIRxBPR	Sex Link	2	29.0	3.3	3.2 3.4	10.3	9.3 11.4
		BX		1					
152	Penna.-Indiana Farm Bureau Grantville, Pennsylvania	WL	Princess 55	11	41.0	3.5	3.2 3.8	9.6	8.3 11.0
		SX		4					
234	Penna.-Indiana Farm Bureau Grantville, Pennsylvania	WL	Dutchess 60	4	43.5	3.3	3.2 3.5	9.8	8.6 11.0
		SX		2					
345	Penna.-Indiana Farm Bureau Grantville, Pennsylvania	WL	Countess 75	8	47.5	3.5	3.2 3.7	11.7	10.3 13.2
		SX		3					
159	Randall Hatchery & Br. Fm. Montclair, California	CGxWL	Randall Gray x Leg.	5	36.0	3.1	2.9 3.3	10.6	9.4 12.0
		BX		1					
160	Rapp Leghorn Farm Farmingdale, New Jersey	WL	Rapp Linecross	10	34.0	3.0	2.8 3.3	9.5	8.2 10.9
		SX		6					
586	Raynor, Ralph E. Charlottesville, P. E. I.	WL	Raynor R 63	8	33.0	3.1	2.9 3.4	10.9	9.5 12.3
		SX		2					
249	Riddle Spring Poultry Farm Manchester, New Hamp.	RIRxWR	Super-Triway	7	30.0	3.4	3.2 3.6	9.4	8.2 10.8
		BX		5					
588	Sanders Chick Hatchery Moncton, N. B.	WL	Keystones	4	39.0	3.5	3.3 3.6	11.9	10.6 13.2
		SX		1					
362	Schuyler Poultry Farms LeRoy, New York	WL	"64" Egg Champs	4	40.0	3.4	3.2 3.6	10.6	9.3 11.9
		SX		3					
181	Shaver Poultry Br. Farm Galt, Ontario	WL	Starcross 288	63	38.1	3.2	2.9 3.6	10.7	9.5 12.0
		SX		23					
315	Shaver Poultry Br. Farm Galt, Ontario	WL	Starcross 292	12	39.0	3.5	3.2 3.8	11.0	9.6 12.4
		SX		6					
572	Smyth, James Nanaimo, Br. Columbia	WL	Smyth 501 x 547	4	38.0	3.7	3.5 3.9	10.6	9.4 11.9
		SX		1					
566	St. Augustin Coop. Hatchery St. Augustin, Quebec	WL	Corvette A1	8	39.0	3.1	2.9 3.3	10.4	9.1 11.8
		SX		2					
596	St. Augustin Coop. Hatchery St. Augustin, Quebec	WL	Corvette 5X	2	38.0	3.4	3.3 3.6	10.3	9.2 11.4
		SX		1					
533	Starline Breeders Hatchery Saskatoon, Saskatchewan	CGxWL	Pearlette	16	38.2	2.9	2.6 3.2	9.9	8.6 11.3
		BX		5					

\* If the confidence limits for two regressed means overlap, the two means are not significantly different at the 5% level.

AGE AT 50% PRODUCTION  (Days)		EGG PRODUCTION				INCOME OVER FEED AND CHICK COST  (\$)		FEED PER POUND OF EGGS PRODUCED  (lbs.)		EGG WEIGHT  (oz.)		LARGE AND EXTRA LARGE EGGS  (%)		BODY WEIGHT  (lbs.)		STOCK CODE
		HEN HOUSED  (No.)		HEN DAY  (%)												
RE- GRESSED MEAN	80%* CONF. LIMITS	RE- GRESSED MEAN	80%* CONF. LIMITS	RE- GRESSED MEAN	80%* CONF. LIMITS	RE- GRESSED MEAN	80%* CONF. LIMITS	RE- GRESSED MEAN	80%* CONF. LIMITS	RE- GRESSED MEAN	80%* CONF. LIMITS	RE- GRESSED MEAN	80%* CONF. LIMITS	RE- GRESSED MEAN	80%* CONF. LIMITS	
177	173 181	217	210 224	68.6	67.1 70.1	1.70	1.53 1.87	3.00	2.91 3.09	24.8	24.5 25.1	65.5	62.4 68.6	5.1	4.8 5.4	526
179	176 182	206	200 212	66.2	65.0 67.4	1.18	1.07 1.29	3.20	3.14 3.26	24.2	23.8 24.6	58.1	55.9 60.3	4.6	4.4 4.8	37
176	172 180	207	200 214	65.8	64.2 67.4	1.07	.90 1.24	3.27	3.17 3.37	24.5	24.2 24.8	62.5	59.4 65.6	5.9	5.6 6.2	257
173	169 177	212	205 219	66.8	65.2 68.4	1.19	1.02 1.36	3.33	3.23 3.43	24.7	24.3 25.1	65.0	61.9 68.1	5.5	5.2 5.8	157
179	175 183	213	206 220	67.5	66.0 69.0	1.51	1.34 1.68	3.12	3.02 3.22	25.5	25.1 25.9	74.5	71.3 77.7	6.0	5.7 6.3	370
176	173 179	226	219 233	71.0	69.6 72.4	1.97	1.83 2.11	2.83	2.76 2.90	24.7	24.4 25.0	68.1	65.5 70.7	4.4	4.2 4.6	152
175	172 178	226	219 233	70.5	68.9 72.1	1.85	1.68 2.02	2.90	2.81 2.99	24.8	24.4 25.2	67.2	64.3 70.1	4.5	4.2 4.8	234
174	171 177	223	216 230	70.9	69.4 72.4	1.79	1.64 1.94	2.84	2.75 2.93	25.0	24.7 25.3	70.8	68.1 73.5	4.4	4.1 4.7	345
171	167 175	225	218 232	70.6	69.1 72.1	1.84	1.67 2.01	2.91	2.81 3.01	25.0	24.7 25.3	68.8	65.7 71.9	5.0	4.7 5.3	159
179	175 183	222	215 229	69.8	68.4 71.2	1.93	1.79 2.07	2.89	2.82 2.96	25.3	24.9 25.7	75.8	73.2 78.4	4.4	4.1 4.7	160
178	174 182	208	201 215	66.2	64.7 67.7	1.43	1.27 1.59	3.10	3.01 3.19	24.8	24.5 25.1	66.2	63.4 69.0	4.6	4.3 4.9	586
179	175 183	220	213 227	68.9	67.5 70.3	1.89	1.74 2.04	3.14	3.06 3.22	25.7	25.3 26.1	76.0	73.4 78.6	6.2	5.9 6.5	249
181	177 185	201	194 208	67.0	65.5 68.5	1.28	1.11 1.45	3.03	2.93 3.13	24.9	24.6 25.2	66.2	63.1 69.3	4.1	3.8 4.4	588
178	174 182	214	207 221	67.5	66.0 69.0	1.58	1.41 1.75	3.04	2.95 3.13	24.6	24.2 25.0	65.0	62.1 67.9	4.5	4.2 4.8	362
172	169 175	238	233 243	74.7	73.8 75.6	2.20	2.10 2.30	2.77	2.71 2.83	25.2	24.9 25.5	73.3	71.2 75.4	4.6	4.4 4.8	181
173	170 176	209	203 215	66.6	65.2 68.0	1.44	1.30 1.58	3.15	3.08 3.22	25.1	24.7 25.5	72.2	69.7 74.7	4.8	4.6 5.0	315
179	175 183	205	198 212	64.9	63.4 66.4	1.10	.93 1.27	3.44	3.35 3.53	24.4	24.0 24.8	56.5	53.4 59.6	4.9	4.6 5.2	572
177	173 181	215	208 222	68.4	66.8 70.0	1.72	1.56 1.88	2.97	2.88 3.06	25.2	24.8 25.6	72.8	69.9 75.7	4.9	4.6 5.2	566
179	176 182	209	202 216	65.7	64.2 67.2	1.54	1.37 1.71	3.03	2.93 3.13	25.1	24.7 25.5	72.0	68.8 75.2	4.2	3.8 4.6	596
173	170 176	216	210 222	67.9	66.5 69.3	1.61	1.48 1.74	3.06	2.99 3.13	25.0	24.6 25.4	67.7	65.2 70.2	5.3	5.1 5.5	533

\* If the confidence limits for two regressed means overlap, the two means are not significantly different at the 5% level.

STOCK CODE	BREEDER'S NAME AND ADDRESS	BREEDING	STRAIN OR TRADENAME	NO. PENS — NO. LOCATIONS	AVG. CHICK PRICE  (¢)	MORTALITY			
						GROWING (%)		LAYING (%)	
						RE- GRESSED MEAN	80%* CONF. LIMITS	RE- GRESSED MEAN	80%* CONF. LIMITS
594	Starline Breeders Hatchery Saskatoon, Saskatchewan	CGxWL	BX Pearlette A	2 1	38.0	3.4	3.3 3.6	10.3	9.3 11.4
186	Stever Hatchery Huntingdon, Pennsylvania	WL	SX Stever SC-300	10 4	35.7	3.1	2.8 3.3	9.6	8.3 10.9
190	Stone's Poultry Farm Dinuba, California	WL	SX Stone's H 56	30 14	35.2	2.6	2.3 2.9	8.2	7.1 9.5
336	Sturtevant Farms, Inc. Halifax, Massachusetts	RIRxWPR	BX Golden Sex Link	7 5	32.0	3.2	3.0 3.5	9.0	7.8 10.3
196	Sunnyside Hatchery Watertown, Wisconsin	CGxWL	BX Wisco White	3 1	35.0	3.3	3.1 3.5	11.1	9.9 12.4
199	Townline Poultry Farm Zeeland, Michigan	WL	SX Townline SC 30	8 3	37.0	3.4	3.2 3.7	10.6	9.3 12.0
556	Triska, Eric Edmonton, Alberta	WL	SX Belmont 292	6 2	35.0	3.5	3.3 3.7	11.8	10.4 13.2
534	Triska, Eric Edmonton, Alberta	WL	SX Belmont 292 A	8 2	35.5	3.4	3.2 3.6	10.0	8.7 11.4
535	Triska, Eric Edmonton, Alberta	WL	SX Belmont 292 B	2 1	36.0	3.3	3.1 3.4	9.7	8.7 10.7
325	University of Tennessee Knoxville, Tennessee	WL	PS Pure Line	4 1	42.0	3.0	2.8 3.2	11.1	9.9 12.4
597	Vriends, Arnold Coverhead Rd., P. E. I.	WL	SX Vriends V-1	2 1	34.0	3.1	3.0 3.2	10.3	9.2 11.3
600	Vriends, Arnold Coverhead Rd., P. E. I.	WL	SX Vriends V-2	2 1	34.0	3.5	3.3 3.6	10.5	9.4 11.5
42	Warren, J. J., Inc. No. Brookfield, Mass.	WL	SX Warren Darby DX	15 8	44.0	3.7	3.4 4.0	11.7	10.2 13.2
305	Warren, J. J., Inc. No. Brookfield, Mass.	RIRxRIW	BX Sex-Sal-Link-F	28 13	41.1	3.2	2.9 3.5	7.4	6.3 8.6
369	Weaver Hatchery Lititz, Pennsylvania	WL	SX Weaver K Cross	1 1	34.0	3.2	3.1 3.3	9.2	8.3 10.0
349	Webster Poultry Farm Auburn, New York	RIR	SX New Red	2 1	37.0	3.3	3.1 3.4	11.7	10.6 12.9
290	Welp's Breeding Farm Bancroft, Iowa	WL	SX Welp Line 937	47 21	37.9	3.0	2.7 3.3	9.0	7.9 10.3
219	Wood Poultry Breeding Farm Pomona, California	AW	BX Austra-White	5 1	36.0	3.1	3.0 3.3	10.1	8.9 11.4

\* If the confidence limits for two regressed means overlap, the two means are not significantly different at the 5% level.



AGE AT 50% PRODUCTION (Days)		EGG PRODUCTION				INCOME OVER FEED AND CHICK COST (\$)		FEED PER POUND OF EGGS PRODUCED (lbs.)		EGG WEIGHT (oz.)		LARGE AND EXTRA LARGE EGGS (%)		BODY WEIGHT (lbs.)		STOCK CODE
		HEN HOUSED (No.)		HEN DAY (%)												
RE- GRESSED MEAN	80%* CONF. LIMITS	RE- GRESSED MEAN	80%* CONF. LIMITS	RE- GRESSED MEAN	80%* CONF. LIMITS	RE- GRESSED MEAN	80%* CONF. LIMITS	RE- GRESSED MEAN	80%* CONF. LIMITS	RE- GRESSED MEAN	80%* CONF. LIMITS	RE- GRESSED MEAN	80%* CONF. LIMITS	RE- GRESSED MEAN	80%* CONF. LIMITS	
175	171 179	217	210 224	68.8	67.3 70.3	1.65	1.47 1.83	3.01	2.91 3.11	24.8	24.5 25.1	66.9	63.8 70.0	5.1	4.8 5.4	594
175	171 179	222	215 229	69.0	67.5 70.5	1.85	1.71 1.99	2.89	2.81 2.97	24.6	24.2 25.0	65.9	63.3 68.5	4.1	3.9 4.3	186
169	166 172	236	230 242	72.3	71.2 73.4	2.00	1.86 2.14	2.87	2.80 2.94	24.7	24.4 25.0	65.3	63.1 67.5	4.6	4.4 4.8	190
177	174 180	225	219 231	70.4	68.9 71.9	2.12	1.98 2.26	3.00	2.92 3.08	26.0	25.6 26.4	81.2	78.6 83.8	6.1	5.9 6.3	336
171	167 175	221	214 228	70.2	68.7 71.7	1.74	1.57 1.91	2.89	2.80 2.98	24.8	24.5 25.1	65.6	62.5 68.7	5.1	4.8 5.4	196
174	170 178	223	216 230	69.7	68.3 71.1	1.82	1.67 1.97	2.95	2.87 3.03	25.0	24.7 25.3	71.1	68.4 73.8	4.5	4.3 4.7	199
179	175 183	216	209 223	69.6	68.1 71.1	1.70	1.53 1.87	2.98	2.89 3.07	25.1	24.7 25.5	71.2	68.3 74.1	4.9	4.7 5.1	556
177	173 181	215	208 222	68.4	66.8 70.0	1.68	1.53 1.83	2.98	2.90 3.06	25.1	24.7 25.5	70.8	67.9 73.7	4.7	4.4 5.0	534
177	173 181	217	210 224	69.7	68.3 71.1	1.73	1.56 1.90	3.06	2.96 3.16	24.8	24.5 25.1	66.9	63.8 70.0	4.5	4.2 4.8	535
175	171 179	202	195 209	64.4	62.9 65.9	1.17	1.00 1.34	3.23	3.13 3.33	24.7	24.3 25.1	63.9	60.8 67.0	4.8	4.5 5.1	325
175	171 179	218	211 225	68.6	67.1 70.1	1.66	1.49 1.83	3.02	2.92 3.12	24.7	24.4 25.0	63.6	60.4 66.8	4.9	4.6 5.2	597
176	172 180	218	211 225	69.0	67.6 70.4	1.63	1.45 1.81	3.05	2.95 3.15	24.9	24.5 25.3	67.5	64.3 70.7	5.0	4.7 5.3	600
185	182 188	215	209 221	69.9	68.6 71.2	1.72	1.59 1.85	2.95	2.88 3.02	24.9	24.6 25.2	70.6	68.2 73.0	4.2	4.0 4.4	42
177	174 180	224	219 229	69.7	68.6 70.8	2.08	1.97 2.19	2.97	2.91 3.03	25.8	25.4 26.2	79.6	77.4 81.8	5.6	5.4 5.8	305
176	172 180	221	214 228	68.7	67.3 70.1	1.75	1.58 1.92	3.02	2.93 3.11	24.9	24.6 25.2	67.9	64.8 71.0	4.4	4.1 4.7	369
178	174 182	214	207 221	68.8	67.3 70.3	1.54	1.36 1.72	3.15	3.05 3.25	24.9	24.5 25.3	67.9	64.8 71.0	5.6	5.3 5.9	349
173	170 176	226	221 231	70.4	69.5 71.3	2.00	1.89 2.11	2.79	2.73 2.85	25.1	24.8 25.4	71.3	69.2 73.4	4.1	3.9 4.3	290
175	171 179	217	210 224	67.9	66.3 69.5	1.58	1.41 1.75	3.05	2.95 3.15	24.9	24.6 25.2	67.7	64.7 70.7	5.0	4.7 5.3	219

\* If the confidence limits for two regressed means overlap, the two means are not significantly different at the 5% level.

STOCK CODE	STRAIN OR TRADENAME	ALBUMEN QUALITY		BLOOD SPOTS				MEAT SPOTS				SPECIFIC GRAVITY SCORE	
				1/8 INCH OR MORE		LESS THAN 1/8 INCH		1/8 INCH OR MORE		LESS THAN 1/8 INCH			
		(Haugh units)		(%)		(%)		(%)		(%)			
RE-GRESSED MEAN	80%* CNDF. LIMITS	RE-GRESSED MEAN	80%* CNDF. LIMITS	RE-GRESSED MEAN	80%* CNDF. LIMITS	RE-GRESSED MEAN	80%* CNDF. LIMITS	RE-GRESSED MEAN	80%* CNDF. LIMITS	RE-GRESSED MEAN	80%* CNDF. LIMITS	RE-GRESSED MEAN	80%* CNDF. LIMITS
578	Andrews Leghorn	78.9	77.6 80.2	1.3	1.1 1.6	1.8	1.7 1.9	0.6	0.2 1.3	1.4	0.6 2.5	5.10	4.92 5.28
145	Random Bred Control	78.7	77.3 80.1	1.4	1.2 1.6	1.9	1.8 2.0	0.2	0.0 0.7	0.4	0.0 1.3	4.71	4.53 4.89
570	Kentville R. B. C.	77.8	76.5 79.1	1.5	1.3 1.8	2.0	1.8 2.1	0.4	0.1 0.9	0.4	0.0 1.1	4.78	4.61 4.95
10	Anthony	80.6	79.4 81.8	1.0	0.8 1.3	1.8	1.6 2.0	0.4	0.1 0.7	0.6	0.2 1.2	4.25	4.11 4.39
138	Arbor Acres Queen	78.9	77.9 79.9	2.2	1.9 2.5	2.1	1.9 2.3	0.4	0.3 0.6	0.4	0.2 0.7	4.73	4.64 4.82
307	Babcock B-300	76.8	75.8 77.8	1.4	1.2 1.7	1.8	1.6 2.0	0.5	0.3 0.7	0.6	0.3 1.0	4.82	4.72 4.92
306	Babcock B-370	75.4	74.2 76.6	1.0	0.7 1.3	1.8	1.6 2.0	0.4	0.2 0.8	1.4	0.8 2.2	4.21	4.08 4.34
20	Beamsdale 66	78.4	77.1 79.7	1.2	1.0 1.4	1.8	1.7 1.9	0.4	0.1 1.0	0.5	0.1 1.2	4.85	4.67 5.03
22	Booth Line 351	78.6	77.2 80.0	1.5	1.3 1.7	1.9	1.9 2.0	0.5	0.1 1.2	0.8	0.1 2.0	4.64	4.43 4.85
329	Booth Line 352	77.8	76.4 79.2	1.3	1.1 1.5	1.9	1.8 2.0	0.5	0.1 1.2	1.2	0.3 2.6	5.26	5.05 5.47
230	Money Maker	78.4	77.3 79.5	1.0	0.8 1.3	1.8	1.6 2.0	0.2	0.1 0.4	0.8	0.4 1.3	5.08	4.95 5.21
361	Tri-Cross	78.3	76.9 79.7	1.3	1.1 1.4	1.9	1.9 2.0	1.5	0.7 2.6	8.3	5.2 11.9	4.54	4.33 4.75
593	Burpee #43	79.2	77.8 80.6	1.3	1.1 1.5	1.9	1.8 1.9	0.4	0.1 1.1	1.7	0.5 3.4	4.75	4.53 4.97
544	Burpee #321	78.4	77.0 79.8	1.2	1.0 1.4	1.9	1.8 2.0	0.5	0.1 1.2	2.6	1.2 4.6	5.04	4.84 5.24
283	Cameron #924	79.0	77.8 80.2	1.3	1.0 1.6	1.9	1.7 2.0	0.6	0.3 1.1	0.6	0.2 1.2	4.70	4.56 4.84
292	Carey E. J. 's	78.3	77.0 79.6	1.4	1.2 1.7	1.9	1.8 2.0	0.4	0.1 0.8	0.9	0.3 1.7	5.16	4.99 5.33
31	Hi-Cash	77.3	76.2 78.4	1.6	1.3 2.0	1.9	1.7 2.1	0.5	0.2 0.8	1.0	0.5 1.6	4.74	4.61 4.87
304	Astronauts	77.7	76.3 79.1	1.3	1.1 1.6	1.8	1.7 1.9	0.4	0.1 0.9	0.7	0.2 1.6	4.53	4.35 4.71
367	EGGSecutive III	76.7	75.3 78.1	1.3	1.1 1.6	1.9	1.8 2.0	0.4	0.1 1.0	1.0	0.2 2.4	4.26	4.06 4.46
558	Clark's #57	79.2	77.8 80.6	1.5	1.2 1.8	1.9	1.8 2.0	0.5	0.1 1.1	2.3	1.1 3.7	5.20	5.02 5.38

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				1/8 INCH OR MORE		LESS THAN 1/8 INCH		1/8 INCH OR MORE		LESS THAN 1/8 INCH			
		(Haugh units)		(%)		(%)		(%)		(%)			
RE-GRESSED MEAN	80%* CONF. LIMITS	RE-GRESSED MEAN	80%* CONF. LIMITS	RE-GRESSED MEAN	80%* CONF. LIMITS	RE-GRESSED MEAN	80%* CONF. LIMITS	RE-GRESSED MEAN	80%* CONF. LIMITS	RE-GRESSED MEAN	80%* CONF. LIMITS		
508	Paymaster 101	75.3 76.6	77.9	1.0 1.2	1.5	1.9 2.0	2.1	6.3 7.9	9.6	10.8 13.4	16.2	4.22 4.39	4.56
330	True-Line #142	76.7 78.2	79.7	1.1 1.3	1.5	1.8 1.9	1.9	0.1 0.5	1.2	0.2 1.0	2.4	4.59 4.80	5.01
364	True-Line SL-280	73.5 74.9	76.3	1.7 2.0	2.3	1.8 1.9	2.0	1.8 2.8	4.0	19.9 23.4	27.2	3.89 4.08	4.27
289	True-Line 365 B	77.0 78.1	79.2	1.3 1.6	1.9	1.8 2.0	2.2	0.2 0.5	0.8	0.5 0.9	1.5	4.83 4.95	5.07
309	Davis Combiner	76.8 77.9	79.0	0.7 0.9	1.2	1.7 1.9	2.1	6.2 7.3	8.5	21.4 23.9	26.4	4.05 4.18	4.31
48	DeKalb 131	76.0 77.2	78.4	0.9 1.1	1.4	1.6 1.8	2.0	0.2 0.4	0.7	0.3 0.7	1.2	4.46 4.58	4.70
277	DeKalb 151	77.6 78.6	79.6	1.2 1.5	1.8	1.7 1.8	2.0	0.2 0.4	0.7	0.4 0.7	1.2	4.44 4.56	4.68
310	Demler Regal	76.7 77.7	78.7	0.9 1.1	1.4	1.6 1.8	1.9	0.2 0.4	0.6	0.5 0.9	1.4	4.79 4.90	5.01
346	Demler Royal	76.1 77.3	78.5	1.0 1.3	1.6	1.8 1.9	2.0	0.1 0.3	0.7	0.2 0.6	1.3	4.48 4.63	4.78
514	deZeeuw 752	76.3 77.7	79.1	0.9 1.1	1.3	1.8 1.9	2.0	0.5 1.1	1.9	0.3 0.9	2.0	4.90 5.09	5.28
592	deZeeuw 752 B	75.7 77.1	78.5	1.2 1.4	1.7	1.9 2.0	2.1	0.1 0.4	0.9	1.1 2.2	3.6	4.89 5.07	5.25
363	Yavneh, Israel	76.1 77.5	78.9	1.1 1.3	1.5	1.9 2.0	2.1	0.4 1.0	1.9	1.0 2.4	4.5	4.44 4.66	4.88
350	Erath Mestiza	74.8 76.2	77.6	1.4 1.6	1.9	1.9 2.0	2.1	0.2 0.6	1.3	0.1 0.6	1.5	4.14 4.34	4.54
311	Maxilay	77.8 79.0	80.2	1.4 1.7	2.0	1.7 1.9	2.0	0.2 0.5	0.9	0.2 0.7	1.4	4.74 4.89	5.04
518	Fisher 103	76.7 78.0	79.3	1.2 1.5	1.8	1.8 2.0	2.1	0.0 0.1	0.4	0.0 0.3	0.8	4.72 4.88	5.04
580	Fisher 303	73.4 74.8	76.2	0.9 1.1	1.3	1.7 1.8	1.9	0.1 0.4	1.1	0.4 1.4	2.9	4.64 4.84	5.04
246	Forsgate F 160	77.5 78.9	80.3	0.9 1.1	1.3	1.8 1.9	2.0	0.3 0.8	1.5	0.6 1.5	2.8	4.49 4.68	4.87
368	Little Red Hen	75.9 77.4	78.9	0.9 1.1	1.3	1.7 1.8	1.9	2.7 4.1	5.8	22.6 27.6	32.8	4.01 4.22	4.43
66	Garber G 200	80.2 81.3	82.4	0.8 1.0	1.3	1.5 1.6	1.8	0.1 0.3	0.5	0.4 0.9	1.5	5.04 5.17	5.30
65	Garber G x 291	76.0 77.3	78.6	0.7 0.9	1.2	1.6 1.8	1.9	0.2 0.4	0.9	0.4 1.0	1.8	4.45 4.60	4.75

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				1/8 INCH OR MORE		LESS THAN 1/8 INCH		1/8 INCH OR MORE		LESS THAN 1/8 INCH			
		(Haugh units)		1/8 INCH OR MORE (%)		LESS THAN 1/8 INCH (%)		1/8 INCH OR MORE (%)		LESS THAN 1/8 INCH (%)			
RE-GRESSED MEAN	80%* CONF. LIMITS	RE-GRESSED MEAN	80%* CONF. LIMITS	RE-GRESSED MEAN	80%* CONF. LIMITS	RE-GRESSED MEAN	80%* CONF. LIMITS	RE-GRESSED MEAN	80%* CONF. LIMITS	RE-GRESSED MEAN	80%* CONF. LIMITS	RE-GRESSED MEAN	80%* CONF. LIMITS
506	Kanaka White	76.0	74.7 77.3	1.0	0.7 1.2	1.7	1.6 1.9	1.6	1.0 2.3	3.0	1.9 4.4	4.96	4.80 5.12
571	Monarch	75.7	74.4 77.0	1.1	0.9 1.4	1.8	1.6 1.9	1.3	0.7 2.0	2.8	1.7 4.2	5.00	4.83 5.17
69	Golden Sex Link	79.4	78.1 80.7	1.0	0.8 1.2	2.1	2.0 2.2	5.9	4.5 7.4	20.8	17.8 23.9	5.05	4.88 5.22
70	Gasson's G 33	78.8	77.4 80.2	1.2	1.0 1.5	1.9	1.8 2.0	0.4	0.1 0.9	0.4	0.0 1.1	4.99	4.81 5.17
72	Ghostley Pearl	81.0	79.7 82.3	1.1	0.8 1.4	1.9	1.7 2.0	0.3	0.1 0.6	0.6	0.2 1.3	4.91	4.76 5.06
338	Ghostley Pearl 63	82.1	81.1 83.1	1.2	1.0 1.5	1.5	1.3 1.6	0.2	0.1 0.4	0.7	0.4 1.1	4.74	4.65 4.83
366	White Leghorn	78.0	76.5 79.5	1.1	0.9 1.3	1.8	1.7 1.9	0.4	0.1 1.0	1.0	0.2 2.4	4.72	4.51 4.93
567	Oka 93	77.5	76.1 78.9	1.4	1.2 1.6	1.9	1.8 2.0	0.7	0.2 1.4	1.7	0.6 3.3	4.58	4.38 4.78
80	Criss Cross H 25	78.4	77.2 79.6	1.5	1.2 1.8	1.9	1.8 2.1	0.4	0.1 0.7	0.8	0.3 1.4	5.00	4.86 5.14
322	Super Nick A	79.8	78.4 81.2	1.5	1.2 1.7	1.9	1.8 2.1	0.3	0.1 0.8	0.6	0.1 1.4	4.05	3.85 4.25
337	Group 1	79.0	77.8 80.2	0.8	0.6 1.1	1.8	1.6 1.9	5.8	4.6 7.1	24.7	21.8 27.6	3.91	3.76 4.06
225	Sex Link	78.3	77.1 79.5	1.0	0.7 1.2	2.2	2.1 2.4	6.1	5.1 7.1	17.9	15.8 20.1	3.79	3.66 3.92
86	Sex Link	77.0	75.7 78.3	1.6	1.3 1.9	2.3	2.2 2.5	4.4	3.2 5.6	21.9	18.9 24.9	4.59	4.42 4.76
88	H & N Nick Chick	79.5	78.5 80.5	1.5	1.2 1.8	1.9	1.7 2.1	0.2	0.1 0.4	0.6	0.3 1.0	4.84	4.74 4.94
275	Breed Cross	76.5	75.1 77.9	1.1	0.9 1.3	1.9	1.8 2.0	0.5	0.1 1.2	1.1	0.3 2.4	4.56	4.36 4.76
316	H-K-Cross	77.9	76.5 79.3	1.4	1.2 1.6	1.9	1.8 1.9	0.7	0.2 1.5	1.2	0.3 2.7	4.71	4.50 4.92
92	Honegger Layer	78.3	77.2 79.4	1.2	0.9 1.5	1.8	1.6 2.0	0.2	0.1 0.4	0.5	0.2 0.9	4.98	4.86 5.10
321	Honegger H-80	75.7	74.5 76.9	1.0	0.8 1.3	1.8	1.7 2.0	0.8	0.4 1.3	0.8	0.3 1.4	4.33	4.18 4.48
276	Comet	78.6	77.4 79.8	0.7	0.5 0.9	1.8	1.7 2.0	6.5	5.4 7.7	27.4	24.8 30.1	4.03	3.89 4.17
360	Hy-Line 934-D	76.3	75.0 77.6	0.8	0.6 1.0	1.6	1.5 1.8	0.1	0.0 0.3	0.1	0.0 0.4	4.84	4.70 4.98

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		(Haugb units)		(%)		(%)		(%)		(%)			
RE-GRESSED MEAN	80%* CONF. LIMITS	RE-GRESSED MEAN	80%* CONF. LIMITS	RE-GRESSED MEAN	80%* CONF. LIMITS	RE-GRESSED MEAN	80%* CONF. LIMITS	RE-GRESSED MEAN	80%* CONF. LIMITS	RE-GRESSED MEAN	80%* CONF. LIMITS	RE-GRESSED MEAN	80%* CONF. LIMITS
240	Hy-Line 934-H	73.5 74.5	75.5	0.6 1.1	1.3 1.6	1.4 1.6	1.3 1.6	0.0 0.1	0.2 0.2	0.2 0.7	0.4 0.7	4.69 4.79	4.69 4.89
356	Ideal 236	75.4 76.8	78.2	1.0 1.6	1.6 1.8	1.6 1.8	1.6 1.8	0.0 0.3	0.0 0.7	0.1 1.2	0.5 1.2	4.61 4.79	4.61 4.97
340	H-3-W-2	77.2 78.2	79.2	1.2 1.8	1.5 1.9	1.7 1.9	1.5 1.9	0.0 0.1	0.0 0.2	0.3 1.0	0.6 1.0	4.90 5.00	4.90 5.10
108	Kerr 409 C	78.1 79.5	80.9	1.1 1.6	1.8 2.0	1.9 2.0	1.8 2.0	0.0 0.3	0.0 0.8	0.2 1.7	0.8 1.7	4.81 4.98	4.81 5.15
341	Kerr P-K 26	77.6 78.9	80.2	1.0 1.6	1.8 2.0	1.9 2.0	1.8 2.0	0.0 0.3	0.0 0.7	0.2 1.5	0.6 1.5	4.64 4.82	4.64 5.00
109	Park's Keystone	75.3 76.7	78.1	1.0 1.4	1.9 2.1	2.0 2.1	1.9 2.1	0.0 0.3	0.0 0.9	0.1 1.3	0.5 1.3	4.71 4.91	4.71 5.11
352	Keystone B-1	76.2 77.6	79.0	1.1 1.6	1.8 2.1	1.9 2.1	1.8 2.1	0.1 0.4	0.1 0.9	0.3 2.1	1.0 2.1	4.85 5.05	4.85 5.25
359	Keystone K-1700	74.6 76.0	77.4	1.1 1.4	1.7 1.9	1.8 1.9	1.7 1.9	0.2 0.8	0.2 1.6	0.3 3.2	1.4 3.2	4.65 4.87	4.65 5.09
110	Kimber K 137	80.7 81.7	82.7	0.8 1.2	1.3 1.6	1.4 1.6	1.3 1.6	0.2 0.4	0.2 0.5	0.4 1.1	0.7 1.1	5.34 5.43	5.34 5.52
111	Kimber K 141	76.4 77.8	79.2	1.2 1.6	1.8 2.0	1.9 2.0	1.8 2.0	0.2 0.7	0.2 1.4	0.4 2.9	1.4 2.9	5.17 5.37	5.17 5.57
112	Kimber K 155	79.0 80.2	81.4	0.7 1.2	1.6 1.9	1.7 1.9	1.6 1.9	0.2 0.5	0.2 0.9	0.3 1.4	0.7 1.4	5.00 5.14	5.00 5.28
365	Kimber K-188	75.4 76.8	78.2	0.9 1.4	1.7 1.9	1.8 1.9	1.7 1.9	1.4 2.3	1.4 3.5	3.8 7.7	5.6 7.7	4.34 4.54	4.34 4.74
347	Kimber K 222	76.3 77.6	78.9	0.9 1.4	1.8 2.0	1.9 2.0	1.8 2.0	0.2 0.5	0.2 1.1	0.1 1.5	0.6 1.5	4.73 4.91	4.73 5.09
344	Buff Sex Link	77.1 78.5	79.9	1.0 1.4	1.7 1.9	1.8 1.9	1.7 1.9	3.8 5.4	3.8 7.3	9.9 13.4	17.3 17.3	4.54 4.75	4.54 4.96
227	K Cross	75.4 76.8	78.2	1.0 1.4	1.8 1.9	1.9 1.9	1.8 1.9	0.3 0.8	0.3 1.6	0.4 2.8	1.3 2.8	4.05 4.26	4.05 4.47
116	Lawton	76.7 78.1	79.5	1.3 1.6	1.8 2.0	1.9 2.0	1.8 2.0	5.4 7.3	5.4 9.4	10.6 19.2	19.2 19.2	4.20 4.41	4.20 4.62
117	Buff Sex Link	76.5 77.6	78.7	0.9 1.4	2.2 2.6	2.4 2.6	2.2 2.6	6.5 7.7	6.5 8.9	21.0 23.4	25.8 25.8	4.30 4.44	4.30 4.58
576	Keyline 110 C	79.0 80.3	81.6	1.2 1.8	1.6 1.9	1.8 1.9	1.6 1.9	0.1 0.3	0.1 0.7	0.2 1.5	0.7 1.5	4.77 4.93	4.77 5.09
595	Keyline 340	76.5 78.0	79.5	1.1 1.5	1.9 2.0	1.9 2.0	1.9 2.0	1.1 2.0	1.1 3.3	4.7 10.6	10.6 10.6	4.36 4.57	4.36 4.78
598	Sex Link	76.9 78.3	79.7	1.2 1.8	1.9 2.1	2.0 2.1	1.9 2.1	4.1 5.6	4.1 7.3	8.3 14.3	14.3 14.3	4.31 4.51	4.31 4.71

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				1/8 INCH OR MORE (%)		LESS THAN 1/8 INCH (%)		1/8 INCH OR MORE (%)		LESS THAN 1/8 INCH (%)				
		RE-GRESSED MEAN	80%* CONF. LIMITS	RE-GRESSED MEAN	80%* CONF. LIMITS	RE-GRESSED MEAN	80%* CONF. LIMITS	RE-GRESSED MEAN	80%* CONF. LIMITS	RE-GRESSED MEAN	80%* CONF. LIMITS	RE-GRESSED MEAN	80%* CONF. LIMITS	
526	Noble N-60	75.1 76.5	77.9	1.4 1.8	1.6	1.8 2.0	1.9	0.3 1.6	0.8	0.3 1.6	0.8 3.7	2.0	5.05	4.85 5.25
37	Reg. Cornell Contr.	77.1 78.2	79.3	1.5 2.2	1.9	1.8 2.1	1.9	0.1 0.5	0.3	0.1 0.5	0.4 1.4	0.8	4.74	4.62 4.86
257	Reg. Red Control	76.9 78.3	79.7	1.0 1.4	1.2	1.8 2.0	1.9	2.9 5.9	4.3	2.9 5.9	10.9 18.5	14.5	4.02	3.82 4.22
157	Reg. Red x Cornell	75.3 76.8	78.3	1.1 1.6	1.3	1.8 2.0	1.9	2.8 5.8	4.2	2.8 5.8	8.8 15.6	12.0	4.63	4.43 4.83
370	Sex Link	77.2 78.6	80.0	1.2 1.6	1.4	1.9 2.1	2.0	7.3 11.8	9.4	7.3 11.8	13.4 22.1	17.5	4.93	4.72 5.14
152	Princess 55	79.9 81.1	82.3	1.0 1.6	1.3	1.7 2.0	1.9	0.1 0.6	0.3	0.1 0.6	0.1 1.1	0.5	4.72	4.56 4.88
234	Dutchess 60	79.5 80.9	82.3	1.2 1.7	1.5	1.8 2.0	1.9	0.2 1.4	0.7	0.2 1.4	0.5 2.5	1.3	4.81	4.62 5.00
345	Countess 75	78.4 79.7	81.0	1.0 1.5	1.2	1.8 2.1	1.9	0.2 1.2	0.6	0.2 1.2	0.3 1.7	0.9	4.79	4.62 4.96
159	Randall Gray x Leg.	75.2 76.6	78.0	0.9 1.3	1.1	1.8 2.0	1.9	0.1 1.2	0.5	0.1 1.2	0.2 2.2	1.0	4.40	4.20 4.60
160	Rapp Linecross	77.2 78.5	79.8	1.2 1.8	1.5	1.7 2.0	1.9	0.1 0.7	0.3	0.1 0.7	0.1 0.9	0.4	4.84	4.68 5.00
586	Raynor R 63	76.2 77.6	79.0	1.1 1.6	1.4	1.8 2.1	2.0	0.4 1.7	1.0	0.4 1.7	1.2 3.8	2.3	5.18	5.00 5.36
249	Super-Triway	76.8 78.1	79.4	1.1 1.6	1.4	2.0 2.3	2.2	2.4 4.5	3.4	2.4 4.5	19.8 25.9	22.8	4.31	4.14 4.48
588	Keystones	78.9 80.3	81.7	1.0 1.4	1.2	1.8 2.0	1.9	0.3 1.7	0.9	0.3 1.7	0.5 3.1	1.5	4.79	4.59 4.99
362	'64 Egg Champs	74.5 75.9	77.3	1.3 1.8	1.5	1.9 2.1	2.0	0.0 0.6	0.2	0.0 0.6	0.3 2.0	0.9	5.09	4.90 5.28
181	Starcross 288	76.2 77.2	78.2	0.9 1.3	1.1	1.6 2.0	1.8	0.3 0.6	0.4	0.3 0.6	0.5 1.4	0.9	4.89	4.79 4.99
315	Starcross 292	75.5 76.7	77.9	1.2 1.9	1.5	1.7 2.0	1.8	0.1 0.6	0.2	0.1 0.6	0.5 1.8	1.0	5.02	4.87 5.17
572	Smyth 501 x 547	75.2 76.6	78.0	1.6 2.1	1.8	1.9 2.1	2.0	0.2 1.3	0.6	0.2 1.3	0.0 1.5	0.5	4.66	4.45 4.87
566	Corvette A1	77.8 79.1	80.4	1.2 1.8	1.5	1.8 2.0	1.9	0.1 1.0	0.4	0.1 1.0	0.8 3.0	1.7	4.66	4.48 4.84
596	Corvette 5X	76.8 78.2	79.6	1.1 1.5	1.3	1.8 1.9	1.8	0.1 1.1	0.5	0.1 1.1	0.0 1.6	0.5	4.64	4.43 4.85
533	Pearlette	72.8 74.1	75.4	0.7 1.2	1.0	1.6 1.9	1.8	0.1 0.7	0.3	0.1 0.7	0.5 1.8	1.0	4.84	4.69 4.99

\* If the confidence limits for two regressed means overlap, the two means are not significantly different at the 5% level.

STOCK CODE	STRAIN OR TRADENAME	ALBUMEN QUALITY		BLOOD SPOTS				MEAT SPOTS				SPECIFIC GRAVITY SCORE	
				1/8 INCH OR MORE		LESS THAN 1/8 INCH		1/8 INCH OR MORE		LESS THAN 1/8 INCH			
		(Haugb units)		(%)		(%)		(%)		(%)			
RE- GRESSEO MEAN	80%* CONF. LIMITS	RE- GRESSEO MEAN	80%* CONF. LIMITS	RE- GRESSEO MEAN	80%* CONF. LIMITS	RE- GRESSEO MEAN	80%* CONF. LIMITS	RE- GRESSEO MEAN	80%* CONF. LIMITS	RE- GRESSEO MEAN	80%* CONF. LIMITS		
594	Pearlette A	76.8	75.4 78.2	1.2	1.1 1.4	1.8	1.8 1.9	0.6	0.1 1.3	1.5	0.5 3.2	5.00	4.78 5.22
186	Stever SC-300	77.3	76.0 78.6	1.4	1.1 1.7	1.9	1.7 2.0	0.5	0.2 1.0	0.6	0.2 1.3	4.87	4.71 5.03
190	Stone's H 56	78.7	77.6 79.8	0.7	0.5 0.9	1.5	1.4 1.7	0.2	0.0 0.3	0.8	0.4 1.3	4.80	4.68 4.92
336	Golden Sex Link	78.6	77.4 79.8	1.9	1.5 2.2	2.0	1.8 2.1	5.0	3.8 6.4	26.8	23.6 30.1	4.25	4.08 4.42
196	Wisco White	76.2	74.8 77.6	1.2	1.0 1.4	1.8	1.8 1.9	0.5	0.1 1.1	0.7	0.1 1.9	4.57	4.36 4.78
199	Townline SC 30	77.8	76.5 79.1	1.3	1.1 1.6	1.9	1.8 2.0	0.5	0.2 1.0	0.7	0.2 1.5	4.79	4.62 4.96
556	Belmont 292	77.6	76.2 79.0	1.4	1.2 1.7	1.8	1.7 1.9	0.6	0.2 1.2	1.5	0.6 2.9	4.73	4.54 4.92
534	Belmont 292 A	79.2	77.8 80.6	1.4	1.2 1.7	2.0	1.8 2.1	0.6	0.2 1.2	1.5	0.7 2.8	4.96	4.78 5.14
535	Belmont 292 B	78.6	77.2 80.0	1.2	1.0 1.4	1.9	1.9 2.0	0.4	0.1 1.1	1.2	0.3 2.7	4.81	4.60 5.02
325	Pure Line	79.8	78.4 81.2	1.5	1.3 1.8	2.0	1.9 2.0	0.6	0.2 1.4	1.5	0.5 3.1	4.97	4.76 5.18
597	Vriends V-1	78.6	77.2 80.0	1.3	1.1 1.5	1.9	1.8 2.0	0.9	0.3 1.8	0.8	0.1 2.1	5.00	4.78 5.22
600	Vriends V-2	78.5	77.1 79.9	1.4	1.2 1.6	1.9	1.8 2.0	1.0	0.4 1.9	1.2	0.3 2.8	5.00	4.78 5.22
42	Warren Darby DX	78.5	77.4 79.6	1.4	1.1 1.7	2.0	1.9 2.2	0.3	0.1 0.6	0.8	0.4 1.4	4.99	4.85 5.13
305	Sex-Sal-Link-F	78.4	77.3 79.5	0.8	0.6 1.0	2.2	2.0 2.4	6.4	5.5 7.4	16.4	14.5 18.4	4.14	4.02 4.26
369	Weaver K Cross	78.3	76.9 79.7	1.2	1.1 1.4	1.9	1.9 2.0	1.4	0.6 2.4	1.4	0.3 3.2	5.03	4.81 5.25
349	New Red	78.1	76.7 79.5	1.3	1.1 1.5	1.9	1.8 1.9	5.4	3.8 7.3	19.9	15.7 24.5	4.27	4.06 4.48
290	Welp Line 937	77.9	76.9 78.9	1.7	1.4 2.1	1.9	1.7 2.1	0.2	0.1 0.4	0.4	0.1 0.7	4.70	4.60 4.80
219	Austra- White	78.7	77.3 80.1	0.9	0.7 1.1	1.8	1.7 1.9	2.7	1.7 4.1	7.8	5.3 10.8	4.69	4.60 4.98

\* If the confidence limits for two regressed means overlap, the two means are not significantly different at the 5% level.



This two-year summary includes performance data on 94 stocks that were entered in both the 1963-64 and 1964-65 tests and 28 stocks that were entered only in the 1964-65 tests. The 1963-64 tests were conducted at 33 different locations, and the 1964-65 tests were conducted at 32 locations. Data for all 16 traits that were included in the combined analysis were reported for all locations except those in the Iowa Multiple Unit Test. Income Over Feed and Chick Cost and Feed Conversion figures were not available from Iowa for either of the two years summarized.

Replicate data were reported by 14 locations in 1963-64 and by 11 locations in 1964-65. An additional five locations in 1963-64 and four in 1964-65 had replicate data but the number of birds per replicate was too small to give a valid analysis. Consequently, the replicate data were combined by entries within each of these locations and the resulting entry average was used in the computations. This was done to more nearly equalize the variance among pens throughout all tests. The number of pens and the number of stocks tested at each location for the two years are given in the table on page 27.

The percentage data for both years for the six traits: growing mortality, laying mortality, large blood spots, small blood spots, large meat spots, and small meat spots were converted to angles with the arc sin transformation prior to analysis. However, the test-year adjustment factors, shown in the table on pages 27 through 31, and the regressed means and confidence limits, shown for these traits in the alphabetical listing of stocks, are given in percent.

The replicate data were analyzed by least-squares procedures to obtain the test-year adjustment factors found on pages 27 through 31, and the repeatability estimates and the correlations among pens within tests found on page 26. The test-year adjustment factors were then used to adjust the simple stock average for test and year effects. The adjusted stock averages (the least-squares stock means) were then regressed toward the overall mean ( $\hat{\mu}$ ) to account for variations in number of tests entered, number of years entered and number of replicates per test. The formula used to compute the regressed mean is:

$$\text{Regressed Mean} = \hat{\mu} + \frac{r_2/C}{1+(k_3-1)x_1+(k_1-k_3)x_2+(k_2-k_3)r_1+[(1/C)-k_1-k_2+k_3]r_2}(\hat{s})$$

where:  $\hat{\mu}$  = the average of the test and year adjusted stock means.

$r_1$  = repeatability within year.

$r_2$  = repeatability from year-to-year.

$x_1$  = the correlation among replicates within year and test.

$x_2$  = the correlation among pens of the same stock from year-to-year for the same test.

$k_1$  = an average of the number of pens per test (averaged over years).

$k_2$  = an average of the number of pens per year (averaged over tests).

$k_3$  = an average of the number of replicates per test-year subclass.

$C$  = the diagonal inverse element for that stock. The reciprocal of  $C$ , i.e.,  $\frac{1}{C}$ , is equal to  $nk_3$  if the assumption is made that the adjustments for test-year effects are made without error; where  $n$  is the number of test-year subclasses in which that stock is entered.

$\hat{s}$  = the test-year adjusted stock average minus the overall mean  $\hat{\mu}$ .

The correlations used in computing the regression coefficient were obtained from estimates of the variance components for stocks ( $\hat{\sigma}_s^2$ ), the stock-X-test interaction ( $\hat{\sigma}_{st}^2$ ), the stock-X-year interaction ( $\hat{\sigma}_{sy}^2$ ) and the random error ( $\hat{\sigma}_e^2$ ). The variance component estimates were obtained by equating the computed mean squares for these effects to their expectations. The mean square for stocks was adjusted for the test-year subclass by least-squares procedures for the effects of stocks and the test-year subclasses. The three-factor interaction was assumed to be non-existent. Ratios of the variance component estimates that were used to compute the correlations are given below:

$$\text{Correlation Among Replicates} = x_1 = \frac{\hat{\sigma}_s^2 + \hat{\sigma}_{st}^2 + \hat{\sigma}_{sy}^2}{\hat{\sigma}_s^2 + \hat{\sigma}_{st}^2 + \hat{\sigma}_{sy}^2 + \hat{\sigma}_e^2}$$

$$\text{Correlation from Year-to-Year (same test)} = x_2 = \frac{\hat{\sigma}_s^2 + \hat{\sigma}_{st}^2}{\hat{\sigma}_s^2 + \hat{\sigma}_{st}^2 + \hat{\sigma}_{sy}^2 + \hat{\sigma}_e^2}$$

$$\text{Repeatability from Test-to-Test (within year)} = r_1 = \frac{\hat{\sigma}_s^2 + \hat{\sigma}_{sy}^2}{\hat{\sigma}_s^2 + \hat{\sigma}_{st}^2 + \hat{\sigma}_{sy}^2 + \hat{\sigma}_e^2}$$

$$\text{Repeatability from Test-to-Test (between year)} = r_2 = \frac{\hat{\sigma}_s^2}{\hat{\sigma}_s^2 + \hat{\sigma}_{st}^2 + \hat{\sigma}_{sy}^2 + \hat{\sigma}_e^2}$$

An approximate standard error (SE) was computed for each regressed mean as follows:

$$SE = b \sqrt{C(\hat{\sigma}_e^2 + k_1 \hat{\sigma}_{st}^2 + k_2 \hat{\sigma}_{sy}^2)}$$

where  $b$  is the regression coefficient given above in the formula for the regressed mean. Confidence limits were then computed for each regressed mean as follows:

$$\text{Regressed Mean} \pm 1.3 \text{ SE}$$

The constant 1.3 was selected so that the probability of the confidence limits overlapping by chance alone between any two means would be about .03. This makes the tests of significance among regressed means almost comparable to using Duncan's range test at the .05 level of probability.

The following terms and definitions should be of help in interpreting the analytical procedures:

Overall Mean:	The average of the test-year adjusted means for all stocks. This estimates what the overall average would have been if all stocks had been entered in all tests in both years.
Range:	The range represents the difference between the expected maximum and minimum performance among the 122 stocks, based on the regressed means.
Test-Year Adjustment Factor:	The amount added to or subtracted from the actual performance of the stocks at a given location in a given year to bring them to the average of all the location-year subclasses which had complete data. These factors were determined on an intra-stock basis with a least-squares analysis and they are given on pages through
Repeatability Within Year:	An intra-class correlation which measures the tendency for common stocks to rank the same from test-to-test within year. Theoretically, it can vary from 0.00 to 1.00.
Repeatability Between Years:	A correlation which measures the tendency for common stocks to rank the same from test-to-test from one year to another. The difference between the repeatability within year and repeatability between years indicates the relative importance of the stock-X-year interaction.
Correlation Among Replicates:	This correlation measures the repeatability among replicates of the same stock in the same test and year. The higher the correlation among replicates the less need there is for replication of stocks within test and year.
Correlation from Year-to-Year Within Tests:	A correlation which measures the tendency for common stocks to rank the same from year-to-year when tested at the same location. The difference between the repeatability between years and the correlation from year-to-year within tests indicates the relative importance of the stock-X-test interaction.
Confidence Limits:	The confidence limits for each regressed mean are computed so that the probability is about .80 that the "true" stock mean lies within the interval. They are presented in this report, however, for the purpose of providing approximate tests of significance for differences among stocks.

## ANALYTICAL DATA FOR THE TRAITS MEASURED

Trait	Overall Means	Regressed Means		Repeatability		Correlations Within Test	
				Within Year ( $r_1$ )	Year-to-Year ( $r_2$ )	Among Replicates ( $x_1$ )	Year-to-Year ( $x_2$ )
		Min.	Max.				
Growing Mortality (%)	3.3	2.6	3.9	0.0475	0.0271	0.1035	0.0832
Laying Mortality (%)	10.2	7.2	15.6	0.1663	0.1145	0.2339	0.1820
Age at 50% Production	175.3	165	185	0.3751	0.3149	0.5963	0.5361
Hen-Housed Egg Production	219.2	194	238	0.3087	0.2732	0.4335	0.3980
Hen-Day Egg Production (%)	69.0	64.4	74.7	0.2716	0.2572	0.4416	0.4272
Income Over Feed and Chick Cost	1.66	1.04	2.20	0.4130	0.3864	0.5325	0.5059
Feed Per Pound of Eggs	3.03	2.71	3.44	0.4655	0.4399	0.6294	0.6038
Egg Weight	25.0	24.2	26.3	0.4458	0.3057	0.8352	0.6951
Large and Extra Large Eggs (%)	69.2	56.5	83.2	0.5558	0.4613	0.7394	0.6449
Body Weight	4.8	4.1	6.6	0.7804	0.7677	0.8566	0.8439
Albumen Quality	78.0	74.1	82.1	0.5134	0.4181	0.7323	0.6370
Large Blood Spots (%)	1.3	0.7	2.2	0.1109	0.0919	0.4026	0.3836
Small Blood Spots (%)	1.9	1.4	2.4	0.0293	0.0293	0.3512	0.3512
Large Meat Spots (%)	1.0	0.1	9.4	0.4589	0.4589	0.6116	0.6116
Small Meat Spots (%)	2.6	0.1	27.6	0.7623	0.7393	0.8677	0.8447
Specific Gravity Score (Sp. Gr.)	4.73	3.79	5.43	0.4673	0.4438	0.5252	0.5017

THE ADJUSTMENT FACTORS USED TO ADJUST FOR TEST DIFFERENCES

Test	No. Pens		Stocks Tested		Percent Mortality			
					Growing Period		Laying Period	
	1964	1965	1964	1965	1964	1965	1964	1965
Alberta	18	22	9	11	+1.46	+0.16	+2.85	+1.02
Arizona - Cage	4	5	4	5	+0.01	+0.02	-0.11	-0.25
Arizona - Floor	4	5	4	5	0.00	+0.06	-0.54	-4.13
Arkansas Conventional	28	--	14	--	-0.68	----	0.00	----
Arkansas Controlled	28	--	14	--	0.00	----	+2.91	----
British Columbia	30	36	15	18	+0.31	+0.03	+0.02	-0.07
California	56	95	28	32	+0.04	+0.47	0.00	+0.19
Central Canada	50	68	23	32	+0.43	+0.52	-0.14	-0.63
Florida	44	48	15	15	0.00	+0.12	-0.12	+0.01
Iowa #7	10	10	10	10	-0.04	+0.05	+1.27	+0.74
Iowa #8	10	10	10	10	-0.15	-0.09	+0.08	+0.01
Iowa #15	20	--	10	--	-1.18	----	-0.13	----
Iowa #20	20	--	10	--	-1.81	----	-0.44	----
Iowa #21	20	20	10	10	-1.49	-1.30	-0.59	-0.88
Iowa #22	--	20	--	10	----	-7.07	----	-1.74
Iowa #23	--	20	--	10	----	-5.28	----	-6.24
Kansas #1	8	8	8	8	-0.19	-0.38	-0.33	0.00
Kansas #3	8	8	8	8	-0.48	-0.05	-0.01	-0.44
Kansas #4	8	8	8	8	-0.02	-0.31	-0.17	-0.77
Kansas #5	8	8	8	8	-0.12	-0.17	-0.03	+0.76
Minnesota #1	14	16	14	16	-0.02	0.00	+0.01	0.00
Minnesota #2	14	--	14	--	-0.83	----	+1.95	----
Missouri	36	80	36	40	0.00	+0.01	+0.74	-0.04
New Brunswick	20	32	10	16	+0.04	+0.42	+0.23	+0.06
New Hampshire #1	15	--	15	--	+0.09	----	+0.65	----
New Hampshire #2	15	16	15	16	-0.03	+0.11	+0.22	+0.36
New Hampshire #4	15	16	15	16	0.00	0.00	+0.27	+0.12
New Hampshire #5	--	16	--	16	----	0.00	----	+0.19
New Hampshire #6	--	16	--	16	----	-0.39	----	-0.01
New Jersey	18	22	18	22	+0.03	+0.03	-0.01	+0.15
Central New York	26	33	26	32	0.00	-0.39	+0.17	+0.02
North Carolina	36	40	18	20	-1.79	+0.73	-1.08	+0.05
Pennsylvania	36	32	33	32	-0.14	+0.07	+0.85	+0.19
Rhode Island	17	36	17	18	+0.56	-0.10	+0.59	+0.13
Tennessee	44	48	22	24	-0.02	-3.53	0.00	+0.01
Texas (1 bird)	26	30	19	21	-0.04	-0.01	+0.28	+0.13
Texas (2 birds)	--	30	--	21	----	+0.01	----	+0.50
Wisconsin	31	58	31	29	+0.02	-0.02	-2.76	-1.88



Test	Days of Age at 50% Production		Egg Production Hen Housed (No.)		Egg Production Hen-Day (%)		Income Over Feed and Chick Cost (\$)	
	1964	1965	1964	1965	1964	1965	1964	1965
Alberta	+ 3.02	+ 8.28	-22.14	-20.51	- 3.56	- 2.80	- 0.54	+ 0.12
Arizona - Cage	+ 9.83	+ 8.88	+ 8.53	+14.72	+ 4.32	+ 5.83	+ 0.20	+ 0.17
Arizona - Floor	+13.47	+ 1.25	+ 0.80	+28.73	+ 1.35	+ 6.29	+ 0.28	+ 0.16
Arkansas Conventional	+ 1.41	-----	+23.13	-----	+ 5.60	-----	+ 0.41	-----
Arkansas Controlled	- 2.91	-----	- 4.52	-----	- 0.37	-----	- 0.09	-----
British Columbia	+ 5.60	- 3.88	- 4.31	+12.27	- 0.83	+ 1.80	- 0.27	+ 0.55
California	+ 4.40	+ 4.42	-30.28	- 7.18	+ 8.63	+ 5.55	+ 0.09	+ 0.39
Central Canada	+ 3.50	+ 1.55	- 0.58	+18.38	- 2.27	+ 2.76	- 0.32	+ 0.54
Florida	+ 5.01	+ 4.14	+ 0.04	-32.73	- 1.17	+ 1.82	- 1.39	- 1.89
Iowa #7	- 3.33	-13.91	- 3.90	+18.59	- 2.59	+ 1.07	-----	-----
Iowa #8	- 4.29	- 5.24	+13.07	+19.26	+ 0.37	+ 1.87	-----	-----
Iowa #15	-11.73	-----	+34.25	-----	+ 5.65	-----	-----	-----
Iowa #20	- 2.77	-----	+15.37	-----	+ 0.88	-----	-----	-----
Iowa #21	-21.99	-22.94	+32.35	+38.54	+ 0.97	+ 2.48	-----	-----
Iowa #22	-----	- 5.41	-----	+31.33	-----	+ 1.04	-----	-----
Iowa #23	-----	+ 7.53	-----	+58.97	-----	+ 8.12	-----	-----
Kansas #1	-32.59	-27.38	+20.81	+20.14	+ 1.42	+ 1.79	+ 0.87	+ 1.31
Kansas #3	-18.59	- 0.63	+ 1.24	+10.62	- 2.87	+ 0.62	+ 0.07	+ 0.73
Kansas #4	- 8.09	- 7.13	+10.29	+17.50	- 0.52	+ 0.40	+ 0.13	+ 0.86
Kansas #5	-29.09	-23.50	+12.66	+ 7.35	- 1.30	0.00	+ 0.24	+ 0.66
Minnesota #1	+ 2.96	+ 2.01	- 7.44	- 1.24	- 2.31	- 0.80	+ 0.30	+ 0.66
Minnesota #2	+ 6.60	-----	-23.07	-----	- 3.08	-----	+ 0.54	-----
Missouri	+12.23	+ 3.75	-21.75	- 2.17	- 3.27	- 0.98	- 0.93	- 0.02
New Brunswick	+12.29	+10.04	-10.57	- 4.16	- 2.92	- 2.38	- 0.51	- 0.15
New Hampshire #1	-11.86	-----	+18.16	-----	+ 2.68	-----	+ 0.37	-----
New Hampshire #2	-15.26	-13.27	- 1.66	- 8.96	- 3.69	- 5.62	+ 0.22	- 0.45
New Hampshire #4	+ 4.70	+ 3.75	+ 1.66	+ 7.86	+ 0.11	+ 1.62	- 0.43	- 0.07
New Hampshire #5	-----	- 6.33	-----	+ 0.17	-----	- 1.52	-----	- 0.26
New Hampshire #6	-----	-11.92	-----	+11.39	-----	+ 1.50	-----	- 0.19
New Jersey	+ 2.64	+ 4.84	- 7.64	-12.82	- 2.31	- 1.71	+ 0.02	+ 0.53
Central New York	- 1.28	- 2.63	- 3.33	+ 7.33	- 1.15	+ 2.69	- 0.95	- 0.35
North Carolina	+ 8.83	+ 6.25	+ 1.26	-12.41	- 3.15	- 3.10	+ 0.90	+ 0.80
Pennsylvania	- 0.37	+ 0.88	+ 4.32	-18.76	+ 2.96	- 2.54	+ 0.26	- 0.04
Rhode Island	+ 9.02	+ 7.17	-16.14	-15.68	- 3.29	- 5.21	- 1.40	- 1.06
Tennessee	+ 5.51	+ 9.72	+ 2.32	+ 6.24	+ 1.07	+ 3.25	- 0.94	- 0.18
Texas (1 bird)	- 2.77	- 3.72	+13.15	+19.34	+ 4.05	+ 5.56	+ 0.05	+ 0.42
Texas (2 birds)	-----	-23.28	-----	+44.46	-----	+11.18	-----	+ 1.06
Wisconsin	+ 4.90	+ 5.34	+10.74	+ 4.13	- 2.50	- 2.71	+ 0.34	+ 0.41

Test	Feed Per Pound of Eggs (Lbs.)		Egg Weight (Oz.)		% Large and Extra Large Eggs		Body Weight (Lbs.)	
	1964	1965	1964	1965	1964	1965	1964	1965
Alberta	- 0.10	- 0.14	+ 0.33	+ 0.33	+ 4.49	+ 7.71	- 0.30	- 0.29
Arizona - Cage	+ 0.08	+ 0.02	- 0.05	- 0.21	+ 5.38	+ 1.94	+ 0.34	+ 0.38
Arizona - Floor	- 0.23	+ 0.01	+ 0.25	+ 0.28	+19.14	- 0.80	+ 0.26	+ 0.57
Arkansas Conventional	- 0.68	-----	+ 0.28	-----	- 9.28	-----	+ 0.02	-----
Arkansas Controlled	- 0.40	-----	+ 0.35	-----	- 0.56	-----	- 0.02	-----
British Columbia	- 0.08	- 0.22	+ 0.01	- 0.60	+ 9.08	- 0.73	- 0.19	- 0.18
California	- 0.06	+ 0.01	- 0.26	- 0.06	- 8.86	- 5.33	- 0.21	- 0.18
Central Canada	+ 0.01	- 0.07	+ 0.23	+ 0.19	+ 4.38	+ 2.87	- 0.26	- 0.14
Florida	+ 0.30	+ 0.21	+ 0.50	+ 0.01	- 2.58	- 7.33	+ 0.06	0.00
Iowa #7	-----	-----	+ 0.59	+ 0.38	+10.20	+ 5.75	+ 0.11	+ 0.24
Iowa #8	-----	-----	+ 0.58	+ 0.43	+10.36	+ 6.92	+ 0.17	+ 0.22
Iowa #15	-----	-----	- 0.04	-----	- 2.82	-----	- 0.02	-----
Iowa #20	-----	-----	+ 1.36	-----	+26.53	-----	+ 0.15	-----
Iowa #21	-----	-----	+ 0.09	- 0.06	0.00	- 3.45	+ 0.13	+ 0.18
Iowa #22	-----	-----	-----	+ 0.04	-----	- 0.89	-----	+ 0.30
Iowa #23	-----	-----	-----	+ 0.98	-----	+18.74	-----	+ 0.30
Kansas #1	- 0.28	- 0.16	- 0.94	- 0.67	- 5.90	- 3.52	+ 0.29	+ 0.20
Kansas #3	+ 0.21	- 0.39	+ 0.10	- 0.12	+ 5.50	- 1.66	+ 0.15	+ 0.05
Kansas #4	+ 0.23	+ 0.40	+ 0.32	- 0.11	+ 5.99	+ 1.20	+ 0.28	+ 0.09
Kansas #5	+ 0.17	+ 0.02	+ 0.32	+ 0.02	+ 1.69	- 1.21	+ 0.33	+ 0.20
Minnesota #1	- 0.11	- 0.18	- 0.17	- 0.32	- 5.04	- 8.48	- 0.26	- 0.22
Minnesota #2	+ 0.12	-----	+ 0.42	-----	- 7.66	-----	- 0.08	-----
Missouri	- 0.08	- 0.27	+ 0.26	+ 0.07	+ 5.15	- 6.61	0.00	+ 0.13
New Brunswick	+ 0.21	+ 0.15	+ 0.15	+ 0.10	+10.02	+ 8.29	- 0.48	- 0.32
New Hampshire #1	- 0.24	-----	+ 0.93	-----	+ 4.88	-----	+ 0.26	-----
New Hampshire #2	+ 0.02	+ 0.05	+ 0.01	+ 0.17	- 3.62	- 1.87	+ 0.14	+ 0.20
New Hampshire #4	+ 0.20	+ 0.13	+ 0.99	+ 0.83	+ 3.74	+ 0.29	+ 0.11	+ 0.16
New Hampshire #5	-----	- 0.06	-----	+ 0.40	-----	- 3.39	-----	+ 0.15
New Hampshire #6	-----	- 0.03	-----	- 1.34	-----	-13.21	-----	- 0.42
New Jersey	+ 0.01	+ 0.01	- 0.22	- 0.28	+ 9.25	+ 7.19	- 0.09	+ 0.09
Central New York	+ 0.15	+ 0.04	- 0.71	- 0.26	- 3.85	- 0.67	- 0.04	+ 0.05
North Carolina	+ 0.02	+ 0.10	- 0.21	- 0.42	- 3.25	- 1.78	- 0.33	- 0.38
Pennsylvania	- 0.07	+ 0.25	- 0.46	- 0.17	+ 1.12	+ 3.39	+ 0.02	+ 0.10
Rhode Island	- 0.15	- 0.50	+ 0.07	+ 0.04	-18.35	- 7.27	- 0.08	- 0.14
Tennessee	+ 0.12	+ 0.10	- 0.49	- 0.26	-14.02	-12.42	- 0.23	- 0.12
Texas (1 bird)	+ 0.11	+ 0.04	+ 0.06	- 0.09	+11.05	+ 7.61	+ 0.16	+ 0.21
Texas (2 birds)	-----	- 0.02	-----	- 0.26	-----	+12.24	-----	+ 0.22
Wisconsin	- 0.16	- 0.16	+ 0.54	+ 0.90	- 6.95	- 4.38	- 0.08	- 0.01

THE ADJUSTMENT FACTORS USED TO ADJUST FOR TEST DIFFERENCES (Continued)

Test	Albumen Quality Haugh Units		% Blood Spots 1/8 Inch or More		% Blood Spots Less than 1/8 Inch	
	1964	1965	1964	1965	1964	1965
Alberta	-1.40	+3.63	0.00	0.00	+0.15	-0.25
Arizona - Cage	-0.74	+0.03	+0.54	+0.59	+0.60	+0.49
Arizona - Floor	+2.62	+1.25	+0.93	+0.56	+0.73	+0.08
Arkansas Conventional	+7.55	----	+0.01	----	+0.02	----
Arkansas Controlled	+7.10	----	+0.02	----	+0.21	----
British Columbia	+1.00	-1.52	-0.01	0.00	-0.01	+0.01
California	+3.06	+1.70	-0.57	-0.23	-0.46	-0.65
Central Canada	+9.49	+4.93	-0.02	0.00	+0.15	-0.06
Florida	-0.11	-2.70	-0.17	-0.06	0.00	-0.03
Iowa #7	-8.74	-5.15	+0.01	-0.03	+0.44	+0.36
Iowa #8	-6.03	-5.26	+0.06	+0.08	+0.65	+0.53
Iowa #15	-5.32	----	+0.31	----	-0.22	----
Iowa #20	-8.03	----	+0.27	----	+0.12	----
Iowa #21	-4.14	-3.37	+0.05	+0.06	+0.07	+0.04
Iowa #22	----	-2.37	----	-0.03	----	+0.75
Iowa #23	----	+0.45	----	-0.01	----	+0.85
Kansas #1	-6.82	-3.88	-0.06	-0.24	+0.09	-0.09
Kansas #3	-5.06	-0.66	+0.01	-0.14	-0.05	-0.03
Kansas #4	-5.16	-3.90	0.00	-0.10	+0.36	-0.05
Kansas #5	-2.87	-4.45	+0.22	0.00	-0.15	+0.07
Minnesota #1	-9.93	-9.16	+0.01	+0.02	+0.67	+0.56
Minnesota #2	-8.64	----	+0.06	----	+1.73	----
Missouri	-0.66	-1.76	+0.49	+0.02	+0.02	-0.81
New Brunswick	+8.85	+12.22	-0.01	0.00	+0.06	-0.03
New Hampshire #1	+3.62	----	+0.16	----	-0.14	----
New Hampshire #2	-1.28	+3.46	-0.03	+0.22	-0.04	+0.11
New Hampshire #4	+4.37	+5.14	+0.06	+0.08	-0.01	-0.03
New Hampshire #5	----	+4.95	----	+0.23	----	+0.58
New Hampshire #6	----	-0.18	----	+0.61	----	+1.82
New Jersey	-2.28	-4.28	+0.22	+0.19	-0.04	+0.13
Central New York	-2.15	+0.72	-0.15	-0.06	-0.37	-0.26
North Carolina	-0.83	+1.74	-0.04	-0.11	-0.06	-0.08
Pennsylvania	-0.20	+0.38	-0.05	+0.01	+0.03	+0.05
Rhode Island	+3.26	+2.40	-0.13	0.00	-0.02	-0.01
Tennessee	+4.14	+5.67	-0.15	-0.02	-0.37	-0.03
Texas (1 bird)	-3.21	-2.44	0.00	0.00	+0.07	+0.03
Texas (2 birds)	----	-3.48	----	0.00	----	0.00
Wisconsin	-1.38	-1.27	-0.19	-0.04	0.00	0.00



Test	Meat Spots 1/8 Inch or More		Meat Spots Less than 1/8 Inch		Specific Gravity Score	
	1964	1965	1964	1965	1964	1965
Alberta	-0.03	-0.11	+0.28	-0.21	+0.66	+0.63
Arizona - Cage	+0.12	+0.58	+0.51	+0.48	-2.51	-2.08
Arizona - Floor	+0.17	+0.31	+0.11	+0.26	-1.88	-1.86
Arkansas Conventional	-0.07	----	-0.08	----	+0.95	----
Arkansas Controlled	+0.01	----	-0.02	----	+1.49	----
British Columbia	+0.01	+0.22	0.00	+0.31	+1.54	+1.95
California	+0.08	+0.12	+0.35	+0.26	-0.45	-0.75
Central Canada	-3.64	-0.27	-1.89	-3.36	+1.70	+1.70
Florida	-0.01	0.00	+0.39	+0.24	-0.26	+0.45
Iowa #7	-0.27	+0.22	+0.03	+0.02	+0.23	-0.04
Iowa #8	-0.59	-0.13	-0.03	-0.04	-0.15	+0.28
Iowa #15	-0.06	----	+0.56	----	+0.45	----
Iowa #20	-4.59	----	+0.34	----	+0.94	----
Iowa #21	-0.30	-0.02	+0.24	+0.22	-0.08	+0.34
Iowa #22	----	+0.22	----	+0.30	----	+0.68
Iowa #23	----	+0.59	----	+0.68	----	+0.17
Kansas #1	-0.58	-0.04	-0.15	-2.02	-0.76	-1.26
Kansas #3	-0.06	+0.04	-0.05	-0.42	-0.65	-1.37
Kansas #4	-0.49	-0.35	-0.37	-0.51	-0.42	-1.33
Kansas #5	-0.09	+0.01	-0.05	-0.78	-0.82	-1.22
Minnesota #1	+0.01	+0.27	+0.60	+0.57	+0.03	+0.45
Minnesota #2	+0.27	----	+0.41	----	+0.06	----
Missouri	+0.29	+0.32	+0.52	+0.18	-0.77	+0.45
New Brunswick	-0.17	-0.01	-1.48	-0.61	+1.50	+1.64
New Hampshire #1	-0.06	----	-0.45	----	-1.36	----
New Hampshire #2	-0.04	+0.59	-0.47	+0.15	-0.82	+1.87
New Hampshire #4	-0.03	+0.06	-0.55	-0.58	+0.33	+0.75
New Hampshire #5	----	+0.91	----	-0.02	----	+1.95
New Hampshire #6	----	+1.90	----	-0.01	----	+2.56
New Jersey	+0.36	+0.16	-0.04	-0.36	-3.20	-1.81
Central New York	+0.02	+0.01	+0.44	+0.47	+1.43	+1.41
North Carolina	+0.08	+0.28	+0.04	+0.14	-1.47	+1.80
Pennsylvania	+0.43	+0.54	+0.74	+1.04	-0.40	-0.34
Rhode Island	-5.28	-1.72	-0.14	+0.01	+1.20	+1.10
Tennessee	-0.13	0.00	-0.52	+0.01	+1.32	+1.49
Texas (1 bird)	+0.01	+0.25	+0.47	+0.45	-1.04	-0.61
Texas (2 birds)	----	0.00	----	+0.21	----	-1.33
Wisconsin	+0.02	+0.13	+0.12	+0.28	+1.08	+1.59

## Alberta Random Sample Egg Production Test

Two laying houses are provided, 20' x 140' and 26' x 80'. Each laying house is divided into 11 pens providing 3.4' per bird. Both buildings are of frame construction with 4" of shavings for insulation in the walls and 6" for insulation in the ceilings. Interior walls and ceilings are lined with 1/4" hard board. Both laying houses are windowless with ventilation and heating provided by a positive blendairst system. A winter temperature of 50°F is maintained. A 4' aisle runs down the front of each building. Pens are separated by a solid plywood partition for the lower 4' and wire from the wood to the ceiling. Each pen has an 18" high enclosed dropping pit that allows 9" of roost space per bird. One Johnson cup waterer is located on top of the pit and each pen is equipped with three 50 pounds capacity hanging feeders. A 100 watt bulb is located at ceiling height between each two pens.

The entrants submitted a random sample of 360 hatching eggs which were hatched at the test facilities. A maximum of 125 pullet chicks were banded and brooded and reared intermingled until they were placed in the laying pens. Fifty bird replicates for each entry were randomly assigned a pen location in the test buildings; one replicate being housed in each laying house.

Combined Newcastle-infectious bronchitis dust vaccine was administered at seven days, four months and 10 months of age. The coccidiosis control program consisted of Amprol in the ration for the first eight weeks. Antibiotics were used to counteract stress during vaccination, and moving from brooder house to range and range to laying house.

The egg prices used in determining income figures were taken from a two year average of prices paid to producers at four major Canadian markets. Feed costs charged against the entry were a two year average of commercial feed costs at three major Canadian centers. Salvage value of the fowl was determined by a two year average of prices for the first three weeks in August at four major Canadian markets. Eggs were sized and graded according to Canadian grade standards.

## Arizona Random Sample Test

We have one open-type house with a double pitched roof with a cupola for air circulation. The house is 125' long x 40' wide and has a central feed room, 20' x 40'. The house is east-west oriented. The east side has 500 cages, 10" wide each, in double rows of 100 cages each, back to back, water in the center and feed in troughs on the outside of the row. On the west side are 10 pens, five on the north side, five on the south side, each pen 10' x 17', with the north and south row separated by a 6' alley. Each pen has two tiers of nests, each nest with a spring door opening to the alley. Floor and cage facilities are provided with a fogger system and fans for cooling purposes.

The pullet chicks which made up each entry were randomly selected by the test management from a hatch of commercial chicks at the entrants hatchery. The chicks were brooded and reared separately by entries at the test site. At housing time, 50 pullets from each entry were placed in floor pens and 50 were placed in individual 10" cages.

The pullets were vaccinated for Newcastle at four and 16 weeks of age by the water method. Bronchitis vaccine was given at one week of age by the intraocular method and at four weeks by the water method. Wing web vaccination for fowl pox was done at six weeks of age. Unistat was fed in the mash from day old until 21 weeks as a control for coccidiosis. No other drugs were used during the testing period.

The egg prices used were obtained from a weighted average of prices paid by a local wholesale buyer on a nest-run basis and a retail-graded basis directly to consumers. Feed and fowl prices were established on a local basis. The egg sizes were broken down into the following weight classifications: Extra Large, 27 ounces +; Large, 24-27 ounces; Medium, 21-24 ounces; Small, 18-21 ounces; Pee Wee, -18 ounces. A premium was paid for extra large eggs. Eggs with blood spots, meat spots and cracks were discounted in price.

## British Columbia Random Sample Egg Production Test

The test is conducted in a 32' x 270' laying house. The house is of frame construction with exterior walls of 1/2" plywood and the interior walls and ceilings of 3/8" plywood. The building is insulated with rock wool in walls and ceilings. The gable roof is covered with aluminum sheeting. The building is divided by a 30' feed and egg room allowing 120' each in the north and south sections. Each section is divided into 20

## British Columbia Test - Continued

12' x 12' pens; ten on each side of an 8' center aisle. The pens are separated with heavy duty 2' wire mesh on 2" x 4" framing. Ventilation of the building is of the pressure type with each section being independent of the other. A fan situated in the loft area section forces air through a duct with openings in the aisle ceiling. Each pen has 3/4 of the area covered by slats with the remaining 1/4 wood shaving litter. Three hanging feeders (22" deep pans) are suspended over the slat area and water is supplied with one 6" Johnson cup. Nests are of the community type with 2' x 8' nesting space per pen. Light is supplied by a 40 watt light bulb in each pen as well as a 1' x 4' window.

Wherever possible, the entrant's eggs must be supplied by a breeder flock in this Province. An official designated by the Committee in charge selects a 40 dozen sample at random for shipment to the Random Sample Station, where all entrant's eggs are hatched in the same incubator. One hundred sixty pullet chicks are selected for each entry and placed in two replicate pens situated in opposite wings of the brooder house. Entries are randomized by the staff of the Poultry Science Department, University of British Columbia.

All chicks are vaccinated intraocularly for Newcastle disease at one day as well as receiving a 0.1 cc injection of Tylosin Chick Injectable. Further vaccination is done at three weeks and 14 weeks of age using combined Newcastle-infectious bronchitis vaccine by the spray method. Coccidiosis control is obtained by using amprolium in the feed from one to 150 days of age and following this, with 12 ounces of sulfaquinolone per ton in the all mash laying ration.

All records are kept on a monthly basis with feed being added to the pens in 50 pound lots and the remainder weighed back at the end of the month. Eggs are graded by pens weekly using all eggs laid for the day. Eggs are graded into Large, 24+; Medium, 21-24; Small, 18-21; Pee Wee, -18; and Cracks. No price differential is given for brown eggs, but there is an allowance for cracks. Blood and meat spots are assessed on a monthly breakout of 20 eggs per pen, but no penalties are assessed for these eggs. Figures used for calculations for feed costs, egg income and allowance for meat values are supplied by the Canada Department of Agriculture, Poultry Division. These values are averages taken at various centers in Canada and are the same for all Random Sample tests conducted in Canada.

## California Official Random Sample Egg Laying Test

Hens in the Sixteenth California Random Sample Lay Test occupied one cage house (1,800 birds in single cages) and five floor houses, each with twenty 8' x 14' pens (50 birds per pen). The cage house is typical of many such structures, consisting of vertical slatted sides and a metal roof. The 9" x 18" cages are arranged in three double rows, with water continuously supplied by troughs, one serving each double row. Feed hoppers are hung over the egg tray at the front of the cages. A fogging system suspended over the birds operates on a thermostat, clock, and selenoid, to intermittently cool the hens during periods when temperatures exceed 92°F. During the summer months, the lower part of the slatted sides is raised for increased atmospheric movement, and closed during the winter season to break up the drift of cold moist air. The floor houses are of the shed roof type. Each pen is equipped with roosts, nests, automatic waterer, and a drum type feeder. Each pen also has an outside door (no adjoining doors), and a large window which can be partially or entirely closed by canvass during inclement weather. Along the back of each pen, under the eaves and also at the floor level, are hinged boards which can be raised to increase ventilation. Built up litter of wood shavings is used in the floor houses.

Each entrant submitted a random sample of 200 day old chicks and hatching eggs for a second lot of 100 pullet chicks. Three replicates of 100 chicks each constituted the entry at the Modesto facilities. Each replicate was raised independently, and at 18 weeks of age, 50 pullets were left in the floor pen, 18 were transferred to cages, and the balance discarded. Assignment of pens and selection of pullets were by randomization.

Water Newcastle vaccine was administered during the first five days of age, and bronchitis vaccine at 2-1/2 weeks. Coccidiosis vaccination was accomplished at one week. The immunization program was completed with intramuscular Newcastle vaccine at four weeks and 16 weeks, fowl pox and laryngotracheitis at 10 weeks, and bronchitis at 16 weeks. A low level of antibiotic (50 gm/ton) was fed for about four months during the cold, rainy, foggy winter months.

Egg prices used were those locally paid to commercial producers, averaged over the immediate preceeding three years with the one price being applied throughout the test. Eggs with shell defects and blood spots



## California Test - Continued

(1/8" to 3/8") were arbitrarily given a small egg price and those with spots greater than 3/8" were given no value. Eggs were graded as follows: Extra Large, 26+ ounces; Large, 23-26 ounces; Medium, 20-23 ounces; Small, 17-20 ounces; Pee Wee, -17 ounces. Each of these sizes was credited with the corresponding price. Brown and tinted eggs were not discounted. Feed costs charged were actual prices paid to local feed mills, averaged over the preceeding three years, and prices received for the hens at the end of the test were those current in the San Joaquin Valley, also averaged over a three year period.

## Central Canada Random Sample Egg Production Test

The 425' x 40' laying house is of frame construction with 4" of rock wool insulation in the walls and ceiling. The interior walls and ceiling are lined with plywood. Ventilation is by four thermostatically controlled fans forcing air out of the building through ventilators in the roof, with air intakes under the eaves into each of the pens. Artificial heating is provided by a steam heat system thermostatically controlled to maintain a temperature of at least 45°F. There are thirty four 12' x 17' pens along both the east and west sides of the house. These pens are divided by a 7' aisle down the center of the building. An 18' x 40' feed and egg room divides the building in half. The pens are separated by a solid wooden wall for the lower 2' and wire from the wood to the ceiling. Each pen has a 16" high enclosed dropping pit that allows 7.4" of roost space per bird. One 8" round automatic waterer is provided in each pen. There are three round hanging feeders, allowing 4.4" feeding space per bird. A 60 watt electric light is centrally located on the ceiling in each pen. There is a 3' x 5' window in each pen. Community type nests are used.

The entry consisted of a random sample of 360 hatching eggs which were hatched at the test facilities. A maximum of 130 pullet chicks were banded and brooded and reared separately by entries. Entries were assigned two pens on a random basis, with the restriction that each entry had one replicate on the east side of the house and one replicate on the west side. Also, that one of these replicates was in the north end of the house and the other in the south end of the house. No entry was allowed to have both replicates in end pens.

The vaccination program consisted of spray vaccination using combined Newcastle-bronchitis vaccine at 12 days of age, followed by a bronchitis vaccination using a spray vaccine at approximately three months of age and a booster Newcastle vaccination by spray vaccine at housing time. The birds were also vaccinated for laryngotracheitis and fowl pox at eight weeks of age. The starter mash contained amprolium as a coccidiostat and a low level treatment of sulphaquinoxaline was administered through the drinking water at intervals of three weeks during the growing period. The first weeks supply of laying mash contained aureomycin at the rate of 200 grams per ton.

The egg prices used in determining income figures were weekly prices on four Canadian markets averaged over the last two years. Feed prices were those based on monthly prices in three Canadian areas, averaged over the last two years. Fowl prices for Grade A birds were those for four Canadian markets over the last two years as they existed for the first three weeks in August. Undergrade birds were valued at 2.0 cents per pound less than Grade A. Eggs were sized according to the following ounce-per-dozen standards: Extra Large, 27+; Large, 24-27; Medium, 21-24; Pullet, 18-21; Pee Wee, 18-. Each of these sizes were credited with the corresponding egg prices. There was no price differential between white and brown eggs. Egg revenue for the entries was based on standard candling procedures which detected B and C grade eggs, as well as cracks, with no value given to eggs containing large blood spots and eggs containing meat spots graded as Grade C.

## Iowa Multiple Unit Poultry Test

The Eighth Iowa Multiple Test consists of ten entries. These are all tested on the same four farms with 20 pens per farm. Birds were tested on the floor at two different cooperators' farms, and in cages on another two cooperators' farms. The chicks in each test unit were brooded on an intermingled basis and then placed on the summer range.

In accordance with past procedures, management of the test units was primarily left to the discretion of the farm cooperator except that all birds were fed all mash. Entries were debeaked at housing time. The birds were vaccinated for fowl pox, Newcastle, and bronchitis, and were housed at about 150 days of age. The test period was 48 weeks. The test unit was terminated when the birds were approximately 486 days of age.

## Kansas Multiple Unit Test

The Kansas Multiple Unit Test is conducted on four cooperating farms. At locations one, three and five, the birds are kept in floor pens, while at location four, colony cages are used. The laying houses at all locations are of frame construction with open fronts. The roofs are insulated. Natural ventilation is controlled by window adjustments. No auxiliary heat is used. Location one uses hanging and trough feeders, allowing 3" per bird. The waterers allow 1/2" per bird and the roosts over the 30" dropping pits permit 6" space per bird. Location three provides 3" trough feeder space per bird and 6" roost space. Individual type nests are used. Location four, with 55 bird colony cages, has a feed trough the length of each cage and a drip type water supply running through each cage. Location five uses hanging feeders and a continuous flow water trough through all pens. The dropping pits are 30" high and permit 6" roosting space per bird. Community nests are used.

Each entrant supplies enough hatching eggs to produce approximately 800 pullet chicks. The eggs are hatched at a central point and the chicks distributed to the cooperating farms where they are brooded intermingled. At housing time, the pullets are separated by entries and placed in pens or cages that had been randomly assigned. Newcastle and bronchitis vaccine was administered by the water method at four days, four weeks and four months of age. Fowl pox was given at 12 weeks of age by the wing web method. No coccidiostat was used unless an outbreak of coccidiosis was evident. No system of other medication was used unless needed.

The egg prices used in the determination of income figures were based on the yearly average for various grades and sizes. The actual price received for the fowl at the end of the test was added to the income. The feed prices charged against each entry were local prices reported by each cooperator. Eggs weighing 24+ ounces per dozen were graded as Large, 21-24 ounces were Medium, and 18-21 ounces were graded as Small. No premium was paid for extra large or jumbo size eggs. Cracks and eggs with small meat spots were credited with an undergrade price. Other undergrades were considered as loss.

## Minnesota Random Sample Egg Production Test

We have two locations for our Minnesota Random Sample Egg Production Test. The two units are located at Stillwater Penitentiary, Stillwater, Minnesota, and the St. Cloud Reformatory, St. Cloud, Minnesota. The 30' x 180' laying house at Stillwater is of frame construction with 4" of rock wool insulation in the walls and a 6" blanket in the ceiling. The construction of the exterior walls is 1" x 6" ship lap siding. The interior walls are finished with 1/4" masonite. The building has eave-type intakes which are controlled manually. The house contains sixteen 10' x 20' pens with a 10' alley running the length of one side. The pens are partitioned with 2 x 4's and 1" x 2" hardware cloth. Each pen has two waist high windows. These windows open inward and are equipped with draft baffles. The house is divided in half by a 20' x 20' combination service room and feed room. Each pen has four 50 pound hanging feeders and one 8' automatic waterer, and is equipped with a 60 watt electric light plus reflector. Each pen has a slatted pit occupying 2/3 of the available floor space and has a 20-hole nest, each nest measuring 8" x 10".

The 30' x 107' laying house at St. Cloud is of frame construction with 4" of rock wool insulation in the walls and a 3' chopped straw blanket in the ceiling. The construction of the exterior walls is 1" x 6" ship lap siding. The interior walls are finished with 1/4" masonite. The building has 2" x 12" eave-type intakes which are controlled manually. The house contains sixteen 10' x 12' pens with a 6' center alley running the length of the building. The pens are partitioned with 2 x 4's and 1" x 2" hardware cloth. Each pen has one waist high window. This window opens inward and is equipped with draft baffles. The 14' x 20' combination service and feed room is situated at the end of the building. Each pen has two 50 pound hanging feeders and one 8' automatic waterer, and a 60 watt electric light plus reflector. Each pen has a slatted pit occupying 2/3 of the available floor space and is equipped with a 10-hole nest, each nest measuring 6" x 8".

Each entrant submitted a random sample of two cases of eggs which were hatched in a leased hatchery. One hundred thirty five pullet chicks were doubled wing banded at Stillwater. Eighty five pullet chicks were double wing banded at St. Cloud. The chicks at both locations were brooded in confinement and then moved to range at six weeks. The range at both locations consisted of a mixture of second year alfalfa and brome. The pen assignments for each entry were obtained by drawing numbers from a box.

The chicks at both locations were given combined bronchitis and Newcastle vaccine in the water at five weeks of age. A booster shot of Newcastle and bronchitis vaccine was administered through the water at 16 weeks. The chicks at both locations were administered fowl pox vaccine at nine weeks using the wing web method. The coccidiosis control program consisted of Nidrafur in the starter and growing mash to 14 weeks. The chicks were given Coccy Vac at 10 days. In view of a past history of blackhead at the Stillwater location, the



## Minnesota Test - Continued

birds were given Hepside in the water for a two week period at the time they were vaccinated for fowl pox. No drugs were used during the laying period.

The egg prices used in the determination of income figures were taken from a three year average using the Urner-Barry report. Feed costs charged against the entry were an average of the actual prices paid at local feed mills. The salvage value of the fowl at the end of the test was the average of three prices offered by local poultry buyers at the close of the test. The eggs were sized according to the following ounces per dozen standards: Extra Large, 26+; Large 23-25; Medium, 21-23; Small, 17-21; Pee Wee, 17-. All eggs with blood or meat spots were considered loss eggs.

## Missouri Official Random Sample Poultry Test

We have two identical 30' x 200' houses. They are of frame construction with shavings for insulation in the walls and ceiling. Each house is divided into fifty 8' x 12' pens, with 25 on each side of a 6' alleyway. The pens are separated by 1" x 2" welded wire from the ceiling and a solid 2' high wood partition from the concrete floor. Natural ventilation from any or all of three windows per pen may be supplied. Adequate supplemental ventilation is provided when needed by exhaust fans in the ceiling. No artificial heat is used. Each pen is equipped with one automatic cup waterer, two round hanging feeders and a 3' x 7' drooping pit with 6" perch space per bird. One 40 watt bulb with reflector is provided per pen.

The entrant submitted a random sample of 300 hatching eggs which were incubated and hatched at our test site. A maximum of 100 chicks were banded from each entry. They were brooded intermingled in nine separate pens in the same house with the same number of chicks from each entry in each pen. At eight weeks of age the birds were moved to range shelters where they remained until housing. The birds are moved to the laying house with odd numbered bands going in one house (Replicate A) and the even ones in the other (Replicate B). Pen numbers in "A" house were assigned in the order the entry was made. Pen numbers in "B" house were assigned by drawing the entrants name from a box; the first entry drawn was placed in pen No. 1, et cetera. Buffer pens were used as end pens in both houses. Eighty birds from each entry were housed, 40 per replicate.

The vaccination program used was as follows: Newcastle-bronchitis vaccine intraocular at one day of age, Newcastle vaccine intraocular at four weeks, fowl pox at eight weeks by the wing web method, laryngotracheitis at 12 weeks (vent brush) and intraocular Newcastle-bronchitis at 16 weeks. Unistat was used in the feed until 10 weeks of age. No drugs were used during the laying period.

Egg price was the quoted "mostly average price" daily market for eggs in Southwest Missouri. The eggs were sized weekly according to the following standards: Extra Large, 26+; Large, 23-25; Medium, 20-22; Small, 17-19; Pee Wee, 17-. There was no price differential between large, extra large, jumbo or egg shell color. No deduction was made because of blood and meat spots or cracks. Feed cost, which was charged against the entry, was the actual cost of ingredients used. The feed was mixed in our mill but no costs of labor, depreciation, et cetera, were included. Revenue from meat for each entry was determined by their respective body weights. Fowl prices were taken as the quoted market in Southwest Missouri on the day the test ended.

## New Brunswick Random Sample Egg Production Test

The 40' x 90' laying house is a two-story building of wood construction with cedar shingles on outside walls, steel roof, and inside walls sheathed with plywood. Planer shavings are used for insulation in the walls and over the ceiling. A 10' x 40' section of the house in the center on both floors is used for a stairway, egg washing and holding room, furnace room and laboratory. The sections on either end are divided into eight pens, 10' x 17', making a total of 32 pens and a 6' wide central alley. Each pen is equipped with one Johnson watering cup, three 50 pound hanging tube feeders, and one hanging feeder for oyster shell and grit. There is one 60 watt light bulb with reflector in each pen, together with a window 20" x 40" in size.

The brooder house is a windowless, two-story building, 38' wide x 82' long, with a section 10' wide across the entire width of the house at one end for a stairway, feed storage, and standby generating plant. The remainder of the building is divided into 16 pens on each floor, size 9' x 16'. There is a 6' wide central alley on each floor. This building is steel on the outside, 2" x 4" joists on 16" centers with 2" fiber glass insulation, vapor barrier and 3/16" plywood with sheathing on the inside. Insulation over the ceiling is 8" of shavings. The bottom floor is concrete; the second floor, 1" unfinished lumber covered with tar-paper and 1-1/2" of concrete. Each pen is equipped with one Johnson watering cup, two 50 pound hanging tube feeders and one 60 watt light with reflector.

## New Brunswick Test - Continued

Each entrant submits 45 dozen of hatching eggs. From these eggs, 160 pullet chicks are banded at hatching time and then brooded intermingled. When the birds are moved to laying quarters, one replicate of each entry is placed on the first floor and the other replicate is placed on the second floor.

Bronchitis vaccine is administered by the spray method at 11 days and by the water method at 16 weeks of age. Amprol is used in the feed for the first 20 weeks for the control of coccidiosis. No other drugs are used.

Eggs are sized according to the following weights to determine price classes: Extra Large, 27+ ounces; Large, 24-27 ounces; Medium, 21-24 ounces; Small, 18-21 ounces; Pee Wee, -18 ounces. Brown and white eggs of equal size bring the same price.

## New Hampshire Multiple Unit Egg Production Test

Farm two and four utilize wooden conventional housing with pen size to allow 2-1/2' of floor space per bird. Farm five, which is the University farm, has floor pens to accommodate 60 birds and farm six, also at the University, has 12" x 16" stair step cages with two birds per cage and 112 birds per entry.

All entries are received at a neutral hatchery in the form of hatching eggs. Chicks are toe marked for identification, randomized and delivered to the three farms where they are brooded intermingled. The vaccination program is left to the discretion of the farm owner. Newcastle, bronchitis and coccidiosis inoculation were the common ones. No drugs were used during the test.

The current Boston market price for brown and white eggs and the fowl price at the conclusion of the test were used in calculating income.

## New Jersey Random Sample Egg Laying Test

The laying house at the New Jersey Random Sample Egg Laying Test is of cinder block construction with an A-type roof. There is no insulation in the walls nor in the ceiling. The building is 240' x 30' with twenty five 8' x 12' pens on each side of a 6' aisle. The building runs north and south with the office, work, heater and feed rooms at the southern end. The 25 pens on the west side are normal floor pens in which is located one 8" round water fountain, one 5' feed hopper, which provides 5" of hopper space per bird, and an 8' x 2' dropping pit which provides 8" of roosting space per bird. The 25 pens on the east side of the building have each been equipped with a 3' x 8' colony cage which has a wire partition down the middle. This partition divides the cage into two 3' x 4' sections. Each cage has one 8" round water fountain located in the partition. This fountain serves both sections of the cage. Also, there is an 8' mash hopper suspended along the front of the cage which provides 4" of hopper space per bird. A 60 watt electric light is suspended from the ceiling in both the cage and the floor pens. There is a 48" x 30" window in each pen that can be opened with a central crank. The windows are opened for ventilation but we also have two large exhaust fans, one on each side, that are also used for this purpose. Forced hot air heat is used during the winter months to keep the temperature from going below 50°F.

The entrant submitted a random sample of 180 hatching eggs which were hatched at the test facilities. The sample was selected from not less than 10 cases of hatching eggs from the flock of the grade indicated on the application form. At hatching time, the chicks were sexed and 55 pullet chicks were selected at random and banded for each entry. They were brooded and reared intermingled until they were placed in the laying pens at which time 25 pullets from each cooperator were placed in a colony cage and 25 in a floor pen. Pen position in both the cage and floor pens was made by drawing numbers from a box.

The birds were vaccinated with a water vaccine at four weeks and again at 14 weeks against Newcastle. At 16 weeks of age, fowl pox vaccine was given by the wing web method and laryngotracheitis by the eye drop method. Coccidiosis control was accomplished by using Amprol in the feed for the first 20 weeks. No drugs were used during the laying period.

The egg prices used in determination of income figures were taken from the daily quotation of the Urner-Barry report. Feed prices charged against each entry were the actual prices paid to the local mill. The price received for the bird at the end of the test was the amount used to determine the salvage value of the fowl. Eggs were sized according to the following standards: Jumbo, 30+; Extra Large, 27-30; Large, 24-27; Medium, 21-24; Pullet, 18-21; Pee Wee, 18-. Each of these sizes were credited with the corresponding egg price. Since there is no Urner-Barry quotation for extra large or jumbos, we have set a figure of 2.0 cents above large for the extra large and 4.0 cents above large for the jumbos. Blood spots and meat spots were not charged against the entry. We have had no strains that produce brown eggs, therefore, we have had no price differential for egg shell color.



## Central New York Official Random Sample Poultry Test

The layers are housed in five uninsulated houses. Four of these are 12' x 120' in size and each house is divided into seven pens, 12' x 16', with an 8' feed room at one end. The fifth house is 12' x 80' with five 12' x 16' pens. All pens open to a concrete walk along the front of the house. Natural ventilation is obtained through windows which can be opened on the front of the house. Each pen has two small doors at the sill level which can be opened for summer ventilation.

Dropping boards along the back wall with two roost poles above provide ample roosting space. Two floor feeders, each 5' long, provide approximately 5" feeding space per bird. One Johnson watering cup is installed in each pen. Water lines and the watering cup are kept from freezing by electric tape. Each pen is equipped with two 40 watt bulbs located directly above the feeders.

A random sample of 210 hatching eggs was chosen at the breeders hatchery or an affiliate hatchery in case of entrants from out-of-State. All samples were selected by a third party, usually a county extension agent. Sixty pullets per entry were banded at day old, brooded in one of two pens (separate pen for heavy breed chicks and for Leghorn chicks, but only wire partition to separate them) to nine weeks of age at which time individual body weights were taken and the pullets moved to A-shaped shelters on range. Pullets from the heavy breed entries were placed in separate shelters from the Leghorn pullets, but all shelters were on the same field so considerable intermingling occurred when they were fed by broadcasting pellets and scratch.

Intraocular Newcastle vaccine was used at 10 days of age. Permanent bronchitis immunity was obtained by inoculation of two birds in each shelter at about 11 weeks of age. Pigeon pox vaccine was given at housing time by the wing web method. Two weeks after housing, Newcastle was administered by the spray method and a booster shot was given early in January. No coccidiostat was used in the feed. Litter management was employed to give coccidiosis protection. Just prior to moving the pullets to the range, a CRD infection was diagnosed by the New York State Veterinary College and three separate treatments with an antibiotic were necessary to get the mortality under control. No drugs were used during the laying period.

Three-year average egg prices as reported by Urner-Barry were used. Feed prices used were three-year averages of actual month to month charges by the feed mill. Salvage value at the end of the test was based on the three-year average of prices actually paid by the dressing plant for live birds picked up at the test plant. Eggs were sized as follows: Extra Large, 27+; Large, 24-27; Medium, 21-24; Small, 18-21; Pee Wee, 18-. Brown egg prices averaged 1.3 cents more than white eggs for large and extra large; 0.6 cents more for medium; 0.5 cents more per dozen for small; and no difference on pee wees. Commercial eggs were valued at 5.0 cents per dozen under large, and cracks at 10.0 cents under large except early in the laying period when prices of small or medium eggs were used as the base from which to cut. No cuts were made for either blood or meat spots.

## North Carolina Random Sample Egg Laying Test

Two houses were used for the North Carolina Random Sample Egg Laying Test. Each house was 34' x 163'8" with ten pens, each measuring 12' x 14'8", on each side of an 8' hallway and with 12' x 32'8" feed room at the north end of the house. Houses had A-type roofs of aluminum on strips with an adjustable ridge ventilator running the length of the house. Block walls enclosed the north and south ends of the bird area except for drive-through doors. East, west, and partition walls had block walls extending 16" above the concrete floor level. Above this level, partition walls were netted wire and east and west walls were approximately 1/3 hinged plywood panels, 1/3 fixed plastic, and 1/3 hinged plastic-covered frames. A ceiling of heavy duck cloth covered the bird area at 8-1/2' height. Each pen was equipped with a 3' automatic water trough and with a 40 watt incandescent light just below the ceiling. Feeders during the growing period range from one box lid through a series of troughs of appropriate size to an 8' trough feeder and 14" diameter tube feeder, which are used during the last weeks of the growing period and throughout the laying period. Roost poles over an enclosed dropping pit provide 8" of roost space per layer. Fifteen single nests are provided in each pen.

Each entrant submitted a sample of 360 hatching eggs which had been randomly selected by a representative of the Official State Agency under the NPPI. The eggs were randomly assigned to incubator trays and hatched at the test facility. A maximum of 120 sexed-pullet chicks were banded, divided into equal lots, and reared in replicate pens. The first replicate of each entry was randomly assigned to a west pen of a house by drawing numbers from a box. The second replicates were assigned to the east pens. At 150 days of age, the number of pullets per pen was reduced by drawing cards from a deck to a maximum of 50 pullets and were kept in the original pens throughout the laying period.

## North Carolina Test - Continued

The vaccination program was intraocular Newcastle-bronchitis at one day, coccidiosis vaccine at four days, Newcastle via water at four weeks, fowl pox via wing web method at eight to 12 weeks, avian encephalomyelitis via water at 10 to 16 weeks, and Newcastle-bronchitis via water at 16 weeks. Early light debeaking was used when needed, with final light debeaking after 12 weeks of age when free of other stresses. Coccidiostat was used in the feed for the period recommended by the manufacturer. No other feed additive or medication was used.

Eggs were sized as follows: Extra Large, 26+; Large, 23-26; Medium, 20-23; Small, 18-20; Pee Wee, 18-. Egg prices were based on the three-year moving average of prices of Grade A eggs for the week as quoted by the Federal-State Reporting Service at Raleigh, North Carolina. About 3% of the eggs were candled by State egg inspectors and the percentage in each grade determined. Downgrades were credited at their current fraction of Grade A value. No premium was credited for extra large or brown eggs. Fowl prices and feed prices were credited at Federal-State quotations from Raleigh, North Carolina.

## Rhode Island Random Sample Laying Test

We have one brooding and rearing house, 30' x 170', built out of concrete blocks with insulation in the ceiling and a concrete floor. It contains 26 pens each 12' x 12' separated by 1" x 2" welded wire with a 6' hallway in the center. Each pen has a waist high window and a floor level window. Each pen has two waterers. We have two laying houses each 200' long and 10' wide cut into 25 pens, 8' x 10', with a door leading to an uncovered outside walkway. There is no insulation in the buildings. The buildings have concrete floors, a floor level window in the rear of each pen and one-half of the front wall in windows.

Each entry consists of a random sample of 360 hatching eggs, from which 70 pullet chicks are banded at hatching time. The chicks are brooded separately by entries. At housing time, the entries are randomly assigned to the two laying houses, one replicate from each entry in each house.

Newcastle vaccine is given in the water at four days, four weeks and four months. Bronchitis is given at 12 weeks by the spray method and fowl pox vaccine is administered at 17 weeks of age by the wing web method. The coccidiosis control program consists of Unistat for the first eight weeks. NF 180 is given every fourth week during the laying period.

Egg prices used in determining the income figures are taken from the Thursday quotations for the Providence, Rhode Island, wholesale egg market. Feed and fowl prices are determined from local quotations. The egg prices credited to an entry are based on the following size classifications: Extra Large, 26+ ounces; Large, 23-25 ounces; Medium, 20-22 ounces; Small -19 ounces. There is no price differential for egg shell color. Egg quality, blood spots, meat spots or cracks are not taken into account in determining income figures.

## Tennessee Random Sample Laying Test

One brooder house of concrete block construction, 40' x 100' in size, is used. The walls are of 8" concrete block. The ceiling is of 1" solid sheeting covered with felt and galvanized iron roofing. Ventilation is by exhaust fans at the top of the ridge row. The entire house has a concrete floor. An aisle extends the length of the building and is approximately 9' wide. Twenty pens are provided, each approximately 10' x 15'. Each pen is divided with a concrete block partition 24" high. The balance of partition is of welded wire. Infra-red heat lamps are used for brooding. Water founts are used for the first two weeks and thereafter automatic water troughs are used. An equal number of pullet chicks from each entry is placed in each of the 20 pens. At 10 weeks of age, all pullets are transferred to a growing shelter which is 40' x 100'. This house is divided into two rooms of equal size. The birds are separated only by a wire partition with one-half of each entry placed in each of the two pens. At housing time, birds are placed in individual cages, 10" x 18". The 32' x 160' building is divided into two rooms each 80' long. Two replicates of 15 birds each are placed in each of these rooms. The ceiling and walls of one room are insulated with 4R of insulation, while the second has 13R of insulation. Ventilation is controlled by a timer and thermostat.

Each entrant supplies one case of 360 eggs of the stock to be tested. These eggs are secured by a representative of the Test management and, in turn, all chicks are hatched in Poultry Department incubators.

## Tennessee Test - Continued

At one day of age, all chicks are sexed and 100 females wing banded for identification and vaccinated for bronchitis and Newcastle disease. In 1964, all chicks were vaccinated for gumboro. At 10 weeks of age, and again at 140 days of age, all chicks are vaccinated for Newcastle and bronchitis. All pullets are vaccinated for fowl pox when approximately 12 weeks old. A coccidiostat is used from one day to 10 weeks of age and, if needed in the judgment of the management, continued through 140 days.

Feed prices for each of the diets are determined on the basis of the actual cost of ingredients delivered to the facilities plus \$10.00 per ton for mixing. These are current prices and not adjusted by year. Egg prices are secured through USDA reporting system and are prices paid by the first receiver on the Atlanta market. Prices are for 80% Grade A. Quotations are for small, medium, and large eggs. Extra large and jumbo eggs are calculated at the same price per dozen as large eggs. The price of fowl at the end of the test is the actual price paid by the local produce house. Egg weights used are Extra Large, 26+; Large, 23-25; Medium, 20-22; Small, -19. No penalties are assessed for the presence of blood spots, meat spots or cracks. Calculations for income are based on the actual number of eggs laid by each entry.

## Texas Random Sample Egg Production Test

The Texas Random Sample Test facilities consist of two brooder houses, two cage houses, and an egg storage and handling building. The egg storage and handling building is located between the brooder and cage houses. The brooder house and each cage house is constructed of corrugated iron with an aluminum roof. The houses have ridgerow ventilation at the top and double row ventilation on the sides and ends. Each brooder house consists of thirty 8' x 12-1/2' pens, 15 on each side of a 6' concrete alleyway. The equipment for each pen includes one 40 watt bulb in the ceiling, sawdust shavings on the floor, two 5' feeders, two five-gallon waterers and two 250 watt infra-red bulbs with reflectors. The bulbs are suspended from the ceiling 18" above the floor. No additional heat is available. The pens have dirt floors. Each cage house consists of 792 10" cages divided equally into three double rows.

Each entrant submitted a random sample of 360 hatching eggs which were hatched at the test site. A maximum of 90 pullet chicks were wingbanded, one band in each wing, brooded and reared intermingled to eight weeks of age at which time they were individually weighed, separated by entries and placed in replicate pens, one pen in each brooder house. Entries placed in pens on the north side of House RS4A had corresponding reps placed in pens on the south side of House RS4B. At 150 days of age the birds were randomly selected by wingband numbers and placed in entry replicates of 16 birds each, two birds per cage, in each of the three rows in House RS11A or a total of 30 different strains in each row. The same procedure was used for House RS11B placing one bird in each cage. The six cages on each end of each row of each cage house contained surplus birds designated as buffer birds. Records were kept on these buffer birds but not reported.

Newcastle vaccination was administered by the water method at four days of age. A combination of Newcastle and bronchitis by the water method at four weeks of age and Newcastle intraocularly at 150 days of age. Fowl pox vaccination by the wing web method was administered at eight weeks of age. Bronchitis vaccination by the virulent strain, swab method, was administered at 14 weeks of age. The coccidiosis control program consisted of sulfaquinoxaline at .015 level in the feed for the first 12 weeks. Hygromycin was used continuously at the rate of eight grams per ton.

Egg prices used in the determination of income figures were taken from the Texas Weekly Egg Market report which listed six different locations within the State. Feed cost charged against the entry was the actual ingredient cost plus 35 cents per hundred pounds for mixing. The current market price for light fowl was used to determine salvage value of the hens at the end of the test. Actual value received was 5.5 cents per pound. Eggs were sized weekly according to the following ounce-per-dozen standards: Extra Large, 27+; Large, 24-27; Medium, 21-24; Small, 18-21; Pee Wee, 18-. Each of these sizes was credited with the corresponding egg price. No strains producing brown shell eggs were entered in the Texas test. No discrimination was made regarding tinted eggs. Eggs with blood and meat spots were considered to have no value. Extra large eggs brought the same price as large eggs.



## Wisconsin Random Sample Egg Production Test

Chicks are intermingled in a 16' x 125' frame construction brooding unit equalized by entry under eight gas brooders until range conditions permit moving to range shelters. Gravity ventilation is used. A 100' x 125' rye grass yard is used to supplement brooding unit until flock is moved to range. At 148 and 149 days of age, the flock is separated by entry and moved to a 24' x 229' frame construction laying house with 2" bat type insulation covered on inner wall and ceiling with marine plywood. The A-type roof has 2" slots under the eaves for intake into the attic area where air is pulled into rooms by intake fans. The roof is not insulated to permit radiant heating of attic air. Intake fans are baffled to mix approximately two-thirds outside air and one-third room air. Exhausts are in ends of rooms. Temperature is held near 55°F during winter months by ventilating system. Gravity ventilation is used during summer months.

There are seventy two 6' x 10' pens along the east and west walls of the house divided by a 4' work aisle down the middle. A 6' x 12' egg cooler and 18' x 12' work room are located in the center of the building. The pens are divided by 2" x 4" welded wire. Floor space is 1.7' per pullet housed. Each pen has a 24" high, 4' x 6' dropping pit with one round automatic type waterer on top. One 4' trough feeder on the aisle end of the dropping pit and one round hanging feeder in the litter area near the outer wall are provided. A 40 watt bulb in each pen for morning and afternoon artificial lighting maintain a 14 hour lighted day. There is a 2' x 3' window for each pen.

Egg samples were collected at random from a list of sources submitted by the entrant. Of the 270 hatching eggs set, 90 pullet chicks were wingbanded with consecutive numbers and started for each entry. At housing time, replicate pens were assigned at random with the first live 35 wingband numbered pullets placed in the east pen and starting with wingband number 46, the first 35 pullets were placed in the west pen.

Bronchitis and Newcastle vaccine were administered by the drinking water method on the fourth day of age; Newcastle vaccine (spray method), on the 33 day and bronchitis vaccine (drinking water), at 102 days of age. Coccidiosis vaccine was given in the drinking water at 16 days of age and fowl pox vaccine by the wing web method at 65 days of age. A coccidiostat, with vitamins A and K, was added to the ration the first seven weeks or during the coccidia cycling period.

Three year average monthly egg prices were based on bi-weekly, "Wisconsin at Farm," quotations as reported by the Federal-State Market News Service for each month. Three year average monthly feed prices were based on weekly retail ingredient prices as quoted by a local feed retailer. Three year average poultry prices were based on Federal-State Market News prices quoted for Wisconsin for the two week period preceeding and following the final day of the test. Eggs were sized according to the following ounce-per-dozen standards: Extra Large, 26+; Large, 23-26; Medium, 20-23; Small, 17-20; Pee Wee, -17. The price differential between large and extra large was determined by the monthly average spread on the Chicago Market as reported by the U. S. D. A. Consumer and Marketing Service. Jumbos were classified as extra large. No price differential was made for shell color. Blood and meat spots detected by candling were considered as no value. Checks were not considered as undergrades, but poor shell texture and odd shaped eggs were.

MANAGEMENT SUMMARY

Test	MANAGEMENT											
	Hatch Date	Housing Date	Length of Test	No. Ent-ries	No. Rep.	Birds per Rep.				Sq. Feet per Bird	Lighting	
	1964	1964	(days)				Brooding	Rearing	Laying*		Rearing	Laying
Alberta	3/30	8/25	500	11	2	50	Litter	Range	Litter	3.4	Natural	14 hrs.
Arizona Floor	2/1	7/1	500	6	1	50	Litter	Litter	Litter	3.4	14 hrs.	14 hrs.
Arizona Cage	2/1	7/1	500	6	1	50	Litter	Litter	Cage-1	1.3	14 hrs.	14 hrs.
Br. Columbia	4/1	8/28	500	18	2	80	Litter	Litter	Litter-Slat	1.8	6 hrs.	14 to 18 hrs.
California	1/20	5/26	500	38	2-C	18	Litter	Litter	Cage-1	1.1	Natural	14 hrs.
					2-F	50	Litter	Litter	Litter	2.3	Natural	14 hrs.
Can. Canada	3/31	8/24	497	34	2	65	Litter	Litter	Litter	3.2	4/	5/
Florida	3/20	8/26	560	24	2	50	Litter	Litter	Litter	2.9	Natural	14 hrs.
Iowa #7	3/26	8/26	486	10	1	60	----	Data Not Reported by Test				----
Iowa #8	3/26	8/26	486	10	1	60	----	Data Not Reported by Test				----
Iowa #21	3/26	9/3	486	10	2	95	----	Data Not Reported by Test				----
Iowa #22	3/26	9/13	486	10	2	45	----	Data Not Reported by Test				----
Iowa #23	3/26	8/25	486	10	2	45	----	Data Not Reported by Test				----
Kansas #1	5/9	10/7	500	8	1	178	Litter	Lit.-Slat	Litter-Slat	1.7	Natural	14 hrs.
Kansas #3	5/9	10/7	500	8	1	212	Litter	Litter	Litter	1.4	Natural	Natural <u>1/</u>
Kansas #4	5/9	10/7	500	8	1	110	Battery	Wire	Cage-55	0.7	Natural	14 hrs.
Kansas #5	5/9	10/7	500	8	1	178	Litter	Lit.-Wire	Lit.-Wire	1.7	Natural	Natural <u>2/</u>
Minnesota #1	3/25	8/23	500	16	1	100	Litter	Range	Litter-Slat	2.0	Natural	14 hrs.
Minnesota #2	3/28	8/26	500	16	1	60	Litter	Range	Litter-Slat	1.7	Natural	14 hrs.
Missouri	3/8	8/5	500	40	2	40	Litter	Range	Litter	2.3	Natural	14 hrs.
New Bruns.	3/27	8/25	494	16	2	75	Litter	Litter	Litter	2.3	14 hrs.	14 hrs.
New Hamp. #2	5/12	10/19	498	16	1	210	Litter	Litter	Litter	2.5	Natural	14 hrs.
New Hamp. #4	5/12	10/19	498	16	1	250	Litter	Litter	Litter	2.5	Natural	14 hrs.
New Hamp. #5	5/12	10/19	498	16	1	60	Litter	Range	Litter	2.5	Natural	14 hrs.
New Hamp. #6	5/12	10/19	498	16	1	112	Litter	Litter	Cage-2	0.7	Natural	14 hrs.
New Jersey-F	3/24	8/21	500	22	1	25	Litter	Litter	Litter	4.0	Natural	14 hrs.
New Jersey-C	3/24	8/21	500	22	1	25	Litter	Litter	Cage-25	1.0	Natural	14 hrs.
Cent. N. Y.	2/28	7/23	500	33	1	50	Litter	Range	Litter	3.8	Natural	14 hrs.
No. Carolina	3/13	8/10	500	20	2	50	Litter	Litter	Litter	3.5	Natural	14 hrs.
Pennsylvania	4/27	9/22	500	32	3	25	Litter	Litter	Litter	3.4	Natural	14 hrs.
Rhode Island	5/3	9/30	500	18	2	31	Litter	Litter	Litter	2.6	Natural	14 hrs.
Tennessee	3/27	8/19	500	25	4	15	Litter	Litter	Cage-1	1.3	Natural	Natural <u>3/</u>
Texas	3/3	7/30	500	30	3	8	Litter	Litter	Cage-1	1.3	Natural	15 hrs.
					3	16	Litter	Litter	Cage-2	0.6	Natural	15 hrs.
Wisconsin	3/1	7/28	500	29	2	35	Litter	Range	Litter	1.7	Natural	14 hrs.

\* The number after the word cage indicates how many birds per cage.

1/ Natural daylight plus 3 to 5 hrs. artificial (increasing). 2/ Increase light program. 3/ 14 hrs. per day until 10 mos.; thereafter increase 15 minutes per week. 4/ At day old--18-1/2 hrs.; light decreased 15 minutes per wk. to meet at 15-1/2 hrs. at longest day then natural decrease until 13-1/2 hrs. 5/ 13-1/2 hrs. until natural increase takes light hrs. to 15-1/2 in mid-June, then light held at 15-1/2 hrs. until end of test.

## MANAGEMENT SUMMARY

RATIONS												Test
Percent Protein			** Meta. Energy-Cal. /lb.			C/P Ratio ***			Weeks Birds are On			
Start.	Grow.	Lay.	Start.	Grow.	Lay.	Start.	Grow.	Lay.	Start.	Grow.	Lay.	
20.2	14.9	15.8	1235	1226	1326	60.0	82.0	84.0	8	12	51	Alberta
21.5	18.0	17.5	1335	1225	1338	62.0	68.0	76.4	8	12	51	Arizona Floor
21.5	18.0	17.5	1335	1225	1338	62.0	68.0	76.4	8	12	51	Arizona Cage
20.2	17.0	17.4	----	----	----	----	----	----	6	15	50	Br. Columbia
22.6	17.8	16.9	1432	1382	1307	63.0	78.0	77.0	7	11	53	California
21.9	16.6	16.8	1300	1330	1360	63.0	89.0	85.0	9	12	49	Can. Canada
22.0	17.4	16.9	1340	1371	1313	60.9	78.8	77.7	8	12	58	Florida
----	----	----	----	Data Not Reported by Test				----	--	--	--	Iowa #7
----	----	----	----	Data Not Reported by Test				----	--	--	--	Iowa #8
----	----	----	----	Data Not Reported by Test				----	--	--	--	Iowa #21
----	----	----	----	Data Not Reported by Test				----	--	--	--	Iowa #22
----	----	----	----	Data Not Reported by Test				----	--	--	--	Iowa #23
21.0	16.0	17.0	----	----	----	----	----	----	6	12	53	Kansas #1
20.0	18.0	16.0	----	----	----	----	----	----	8	3	60	Kansas #3
20.0	15.0	16.0	----	----	----	----	----	----	6	18	47	Kansas #4
20.0	17.0	17.0	----	----	----	----	----	----	5	16	50	Kansas #5
21.5	15.4	17.1	1256*	1257*	1260*	58.4	81.6	73.7	8	16	47	Minnesota #1
21.5	15.4	17.1	1256*	1257*	1260*	58.4	81.6	73.7	8	16	47	Minnesota #2
20.5	16.1	16.9	1347	1289	1311	65.7	79.9	77.6	8	13	50	Missouri
20.7	14.9	16.0	1300	1330	1360	63.0	89.0	85.0	8	14	50	New Bruns.
----	----	----	----	Data Not Reported by Test				----	8	13	50	New Hamp. #2
----	----	----	----	Data Not Reported by Test				----	8	13	50	New Hamp. #4
----	----	----	----	Data Not Reported by Test				----	8	13	50	New Hamp. #5
----	----	----	----	Data Not Reported by Test				----	8	13	50	New Hamp. #6
21.2	----	18.8	1227	----	1144	57.9	----	60.9	6	0	65	New Jersey-Floor
21.2	----	18.8	1227	----	1144	57.9	----	60.9	6	0	65	New Jersey-Cage
----	----	16.8	----	----	1372	----	----	81.7	9	12	50	Cent. N. Y.
20.0	16.0	16.0	1249	1238	1234	62.4	77.4	77.1	8	13	50	No. Carolina
21.0	17.0	18.0	1300*	1357*	1354*	61.9	79.8	75.2	10	11	50	Pennsylvania
21.5	16.7	16.4	1280	1330	1286*	59.5	79.6	78.4	8	13	50	Rhode Island
21.9	17.2	16.8	1333	1347	1271	60.7	78.4	75.9	10	11	50	Tennessee
21.5	17.5	17.5	1264*	1324*	1376*	58.8	75.7	78.6	8	13	50	Texas
20.0	17.0 14.0	16.0	1205	1230 1259	1270	60.0	72.0 90.0	79.0	6	5 10	50	Wisconsin

\* Approximate metabolizable energy computed from productive energy, using 70% as the conversion factor.

\*\* Metabolizable energy is the maximum quantity of the energy of the feed which possibly may be used by the chicken.

\*\*\* Metabolizable calories divided by percent crude protein.

Stocks Entered in 1964-65 Random Sample Egg Production Tests  
(Listed alphabetically and showing tests entered)

Stock Code	Breeder	Stock	No. Entries	Ala.	Ariz.	Br. Col.	Calif.	Cent. Can.	Fla.	Iowa	Kansas	Minn.	Mo.	New Bruns.	N. H.	N. J.	C. N. Y.	N. C.	Penna.	R. I.	Tenn.	Texas	Wisc.
578	Andrews	Andrews Leghorn	2			X	X	X															
145	Animal Res. Inst.	Random Bred	2				XX	XX															
570	Animal Res. Inst.	Kentville R. B.	4			X	XX	XX															
10	Anthony	White Leghorn	7																				
138	Arbor Acres	Queen	13		X		X																
307	Babcock	Babcock B-300	18			X	X	X	XX														
306	Babcock	Babcock B-370	6				X																
20	Beamsdale	Beamsdale 66	2				X																
22	Booth	Booth Line 351	1																				
329	Booth	Booth Line 352	1																				
230	Brender	Money Maker	6																				
361	Burling	Tri Cross	1																				
593	Burpee	Burpee #43	1																				
544	Burpee	Burpee #321	1																				
283	Cameron	Cameron #924	5																				
292	Carey	Carey E. J's	4																				
31	Cashman	Hi-Cash	5																				
304	Cashman	Astronauts	1																				
367	Childers	EGGSecutive III	1				X																
558	Clark	Clark's #57	2					X															
508	Clark	Paymaster 101	2					X															
330	Colonial	True-Line #142	1																				
364	Colonial	True-Line SL 280	1																				
289	Colonial	True-Line 365 B	10				X	X															
309	Davis	Davis Combiner	5				X	X															
48	DeKalb	DeKalb 131	17		X		X		XXXX														
277	DeKalb	DeKalb 151	6				X																
310	Demler	Demler Regal	11				X																
346	Demler	Demler Royal	3				X																
514	deZeeuw	deZeeuw 752	1				X																
592	deZeeuw	deZeeuw 752 B	3		X																		
363	Eckert	Yavneh	1																				
350	Erath	Erath Mestiza	1																				
311	Evans	Evans Maxilay	2				X																
518	Fisher	Fisher 103	3					X															
580	Fisher	Fisher 303	1																				
246	Forsgate	Forsgate F 160	2																				
368	Fox Den	Little Red Hen	1																				
66	Garber	Garber G 200	9				X																
65	Garber	Garber G x 291	4				X																



Stocks Entered in 1964-65 Random Sample Egg Production Tests - Continued  
(Listed alphabetically and showing tests entered)

Stock Code	Breeder	Stock	No. Entries	Ala.	Ariz.	Br. Col.	Calif.	Cent. Can.	Fla.	Iowa	Kansas	Minn.	Mo.	New Bruns.	N. H.	N. J.	C. N. Y.	N. C.	Penna.	R. I.	Tenn.	Texas	Wisc.
506	Gardiner	Kanaka White	4	X		X		X						X									
571	Gardiner	Monarch	3	X		X		X							X				X				
69	Garrison	Golden Sex Link	2																				
70	Garrison	Gasson G 33	2																				
72	Ghostley	Ghostley Pearl	1																				
338	Ghostley	Ghostley Pearl 63	13				X	X		X	X	X	X		X	X		X	X	X			
366	Goertz & Kruger	White Leghorn	1																				
567	Graton	Oka 93	1				X																
80	Hansen	Criss Cross H 25	5			X																	
322	Hanson	Super Nick A	3																				
337	Harco	Group I RIR	2																				
225	Harco	Harco Sex Link	6																				
86	Hardy	Hardy Sex Link	1																				
88	H & N	H & N Nick Chick	15			X	X		XXX	X	X	X						X					
275	H & N	H & N Breed Cross	1				X																
316	Heisey	H-K Cross	1																				
92	Honegger	Honegger Layer	11				X	X	XX				X						X	X			
321	Honegger	Honegger H-80	3																				
276	Hubbard	Hubbard Comet	3																				
360	Hy-Line	Hy-Line 934 D	13				X	X	XX		X	X	X					X					
240	Hy-Line	Hy-Line 934 H	6				X		X	X													
356	Ideal	Ideal 236	3																				
340	Ideal	Ideal H-3-W-2	12				X		X	X													
108	Kerr	Kerr 409 C	2				X		X														
341	Kerr	Kerr P-K 26	2																				
109	Keystone	Keystone Leghorns	1																				
352	Keystone	Keystone B-1	3										X						X				
359	Keystone	Keystone K-1700	1																X	X			
110	Kimber	Kimber K 137	18		X		X	X	XX	X	X	X	X					X	X	X			
111	Kimber	Kimber K 141	1				X																
112	Kimber	Kimber K 155	6				X		X				X						X				
365	Kimber	Kimber K 188	1																				
347	Kimber	Kimber K 222	1																				
344	Kingstowns	Buff Sex Link	1																				
227	Klongland	Klongland K Cross	1																				
116	Lawton	Lawton WPR	1																				
117	Lawton	Buff Sex Link	5																				
576	Man.Dairy & Fty.Coop.	Keyline 110 C	4	X		X		X					X		X		X		X	X			
595	Man.Dairy & Fty.Coop.	Keyline 340	1																				
598	Nelson	Nelson Sex Link	2					X						X			X						



Stocks Entered in 1964-65 Random Sample Egg Production Tests - Continued  
(Listed alphabetically and showing tests entered)

Stock Code	Breeder	Stock	No. Entries	Alta.	Ariz.	Br. Col.	Calif.	Cent. Can.	Fla.	Iowa	Kansas	Minn.	Mo.	New Bruns.	N. H.	N. J.	C. N. Y.	N. C.	Penna.	R. I.	Tenn.	Texas	Wisc.
526	Noble	Noble N-60	1				X						X				X			X			
37	No. Cen. Reg. Lab.	Reg. Cornell Contr.	7				X																
257	No. Cen. Reg. Lab.	Reg. Red Control	1				X																
157	No. Cen. Reg. Lab.	Reg. Red x Cornell	1				X																
370	Oak Crest	Sex Link	1						X														
152	Pa.-Ind. Farm Br.	Princess 55	4																				
234	Pa.-Ind. Farm Br.	Dutchess 60	2																				
345	Pa.-Ind. Farm Br.	Countess 75	2																				
159	Randall	Gray x Leghorn	1				X																
160	Rapp	Rapp Linecross	2																				
586	Raynor	Raynor R-63	2					X															
249	Riddle Spring	Super Triway	1																				
588	Sanders	Sanders Keystones	1																				
362	Schuyler	"64" EGG Champs	3																				
181	Shaver	Starcross 288	17	X		X	X	X		X		X	X	X	X	X	X	X	X		X	XXX	X
315	Shaver	Starcross 292	5					X					X										
572	Smyth	Smyth 501 x 547	1			X																	
566	St. Augustin	Corvette A-1	2			X	X	X															
596	St. Augustin	Corvette 5-X	1			X	X	X															
533	Starline	Pearlette	5	X		X	X	X															
594	Starline	Pearlette A	1					X															
186	Stever	Stever SC300	3																				
190	Stone	Stone H 56	7		X	X	X		X	X		X				X	X	X	X				
336	Sturtevant	Golden Sex Link	1																				
196	Sunnyside	Wisco White	1																				
199	Townline	Townline SC30	3																				
556	Triska	Belmont 292	1					X															
534	Triska	Belmont 292 A	2	X				X															
535	Triska	Belmont 292 B	1	X																			
325	Univ. of Tennessee	Pure Line Leghorn	1																		X		
597	Vriends	Vriends V-1	1					X															
600	Vriends	Vriends V-2	1					X															
42	Warren	Warren-Darby DX	3			X						X								X			
305	Warren	Sex-Sal-Link F	7																	X			
369	Weaver	Weaver K-Cross	1																				
349	Webster	Webster New Red	1																				
290	Welp	Welp Line 937	8				X			X		X					X					X	
219	Wood	Austra-White	1				X			X		X					X						

## INTRODUCTION

The information contained in the Range Group Ranking section of this publication deals only with the records established during the 1964-65 test year.

The performance of each entry in the 20 Random Sample Egg Production Tests conducted during 1964-65 is reported as the Range Group Rank of the entry for the trait measured. These rankings were called Quartile Ranking in past years. However, the computations used to determine the rank were not changed and were determined in the following manner. For each trait the entries in each test were aligned in descending order from the most desirable to the least desirable performance. The "mean" or average performance for the trait was then determined. All entries above the mean are in range group 1 or 2 and those below the mean are in range group 3 or 4. The dividing point for the entries above or below the mean is the midpoint of the range between the mean and the top or bottom entry. To illustrate:

Stocks entered in the Missouri Test had a mean, or average, of 225.63 eggs for the trait "Eggs Per Pullet Housed." The highest average number of eggs laid by any entry in this test was 246.00 and the lowest average number laid by any entry was 198.30 eggs. To arrive at the dividing point between the 1st and 2nd range groups, the mean (225.63) was subtracted from the highest number of eggs (246.00). The result, 20.37 eggs, was divided by two in order to get the midpoint of the range (10.19 eggs). This was subtracted from the highest number of eggs (246.00 - 10.19) to arrive at the dividing point (235.81 eggs) between the 1st and 2nd range groups. To determine the dividing point between the 3rd and 4th range groups, the same procedure was used, except that the lowest average number of eggs (198.30) was subtracted from the mean (225.63 eggs). This difference, or range (27.33 eggs) was then divided by two and the result (13.67 eggs) was subtracted from the mean (225.63 - 13.67) to get the dividing point (211.96) between the 3rd and 4th range groups. These determinations for each trait and test are tabulated on pages 49 through 53.

The breeders of the stocks tested are listed in alphabetical order and the Range Group Rankings of each entry of the stock is shown under the breeder's name. Each entry is also identified by the abbreviated name of the entrant. In some cases, the sample was drawn from a source other than the entrant's hatchery or supply flock. In such cases, the abbreviated name of the source of the sample is shown in parentheses following the entrant's name.

The listing of the entries in the four range groups, where all entries of each stock are listed together, permits the reader of the report to quickly evaluate a stock based on this method of analysis. It should be kept in mind, however, that this method provides just four broad classifications. One-tenth of an egg or one-tenth of a percent difference in mortality could put an entry up one Range Group Rank or down one Range Group Rank, depending on its place in the range grouping.

LIST OF ENTRANTS OTHER THAN BREEDER OF STOCK

<u>Name and Address</u>	<u>Stock Entered</u>
Arizona Star Farm Hatchery, Tucson, Arizona	DeKalb
Arizona State Hatchery, Tucson, Arizona	Kimber
Atwood Hatchery, Comanche, Texas	H & N
B & C Hatchery, Neodesha, Kansas	Kimber
Babcock Hatchery, Inc., Lititz, Pennsylvania	Babcock
Bloomingdale Poultry Farm, Box 373, Valrico, Florida	Kimber
Boothe Hatchery, 513 St. George, Gonzales, Texas	Demler
Brandenburg Hatchery, 735 Railroad Ave., Dunedin, Florida	DeKalb
Browder's Hatchery, Box 330, Tampa, Florida	Honegger

<u>Name and Address</u>	<u>Stock Entered</u>
Coombs Poultry Farm, Inc., Sedgwick, Kansas	Hy-Line
Corrigan-Gonzalez Export Corp., 4001 N. W. 25th St., Miami, Florida	Hy-Line
Craddocks, Inc., Box 188, Bellville, Texas	DeKalb
DeWitt's Hatchery, Nacogdoches, Texas	Shaver
Florida State Hatcheries, Box 666, Gainesville, Florida	Kimber
Frizzell Poultry Farm & Hatchery, 4818 97th Ave., Tampa, Florida	H & N
Garrison, Earl W., Inc., Bridgeton, New Jersey	Stever
Greider Leghorn Farms, Inc., Mt. Joy, Pennsylvania	Shaver
Gulf Coast Hatchery, Inc., Box 361, Quincy, Florida	Babcock
Hatchery Enterprises, Inc., Box 11065, Tampa, Florida	DeKalb
Hodges Poultry Farm & Hatchery, Box 154, Callahan, Florida	Babcock
Hy-Lay Hatcheries, Inc., Box 1111, Bryan, Texas	Hy-Line
Hy-Line Chicks, Box 730, Chatham, Ontario	Hy-Line
Intercontinental Hatchery, P. O. Box 222, Miami Springs, Florida	Ideal
Joe's Poultry Farm, Box 347, Arcadia, Florida	DeKalb
Johnson Hatchery, Hamilton, Texas	Hy-Line
Jordan Brothers Hatchery, Bridgewater, Virginia	Ideal
Kazmeier Hatchery, Box 791, Bryan, Texas	Hy-Line
Law, H. A. Hatfield Point, New Brunswick	Warren
Oak Crest Hatcheries, Inc., Box 563, Jacksonville, Florida	H & N
Orange Blossom Hatchery, Box 6442, Jacksonville, Florida	Garber
Owens Hatchery, Dahlonga, Georgia	Ideal
Parks Poultry Farm, Route #4, Altoona, Pennsylvania	Keystone
Pierson-Craddock Hatchery, Box 511, Hamilton, Texas	DeKalb
Pine Acres Poultry Farm, Box 808, Lake City, Florida	H & N
Pine Air Poultry Acres, Box 843, Jacksonville, Florida	Honegger
Poultry Products, Inc., Box 66B, Winter Garden, Florida	Stone
Pratt's Hatchery, Glendale, Arizona	Arbor Acres
Smith Farm and Hatchery, Henry, Route #2, Hilliard, Florida	DeKalb
Sun Valley Hatchery, Phoenix, Arizona	Stone
Swift & Co., Box 588, Yoakum, Texas	Shaver
Tropical Poultry Enterprises, 1001 E. 28th St., Hialeah, Florida	Colonial
Vance Hatchery, Shallowater, Texas	H & N
Wallace Hatchery, Inc., Box 11236, St. Petersburg, Florida	Hy-Line
Western Hatcheries, 183 Cole Street, Dallas, Texas	Kimber
Wheelock, Walter E., Chambersburg, Pennsylvania	Ghostley
Williams Poultry Farm & Hatchery, Box 302, Denison, Texas	H & N
Yeiser-Demler Chix, Inc., Winchester, Kentucky	Demler

## SUMMARY OF IMPORTANT DATA FOR ALL RANDOM SAMPLE EGG LAYING TESTS

Trait Measured			Alberta		Arizona		British Columbia		California	
Net Income Over Feed and Chick										
Costs Per Pullet Housed - Ave.			\$1. 672		\$1. 736		\$1. 232		\$1. 429	
Range Group	-	1	\$2. 100	1. 886	\$1. 980	1. 858	\$1. 850	1. 541	\$2. 030	1. 729
"	"	- 2	1. 885	1. 672	1. 857	1. 736	1. 540	1. 232	1. 728	1. 429
"	"	- 3	1. 671	1. 416	1. 735	1. 648	1. 231	0. 613	1. 428	0. 919
"	"	- 4	1. 415	1. 160	1. 647	1. 560	0. 612	-0. 060	0. 918	0. 420
Eggs Per Pullet Housed - Ave.			239. 15		196. 30		208. 11		232. 11	
Range Group	-	1	266. 80	252. 97	210. 40	203. 35	241. 60	224. 85	259. 10	245. 60
"	"	- 2	252. 96	239. 15	203. 34	196. 30	224. 84	208. 11	245. 59	232. 11
"	"	- 3	239. 14	230. 17	196. 29	188. 80	208. 10	188. 05	232. 10	218. 65
"	"	- 4	230. 16	221. 20	188. 79	181. 30	188. 04	168. 00	218. 64	205. 20
Days to 50% Production - Ave.			167. 0		169. 6		179. 1		167. 5	
Range Group	-	1	160. 0	163. 5	162. 0	165. 8	168. 0	173. 6	161. 0	164. 3
"	"	- 2	163. 6	167. 0	165. 9	169. 6	173. 7	179. 1	164. 4	167. 5
"	"	- 3	167. 1	170. 5	169. 7	173. 8	179. 2	184. 1	167. 6	172. 3
"	"	- 4	170. 6	174. 0	173. 9	178. 0	184. 2	189. 0	172. 4	177. 0
% Mortality Growing Period - Ave.			1. 90		2. 54		3. 59		1. 73	
Range Group	-	1	0. 80	1. 35	0. 00	1. 27	0. 70	2. 15	0. 40	1. 07
"	"	- 2	1. 36	1. 90	1. 28	2. 54	2. 16	3. 59	1. 08	1. 73
"	"	- 3	1. 91	2. 65	2. 55	4. 02	3. 60	8. 75	1. 74	2. 67
"	"	- 4	2. 66	3. 40	4. 03	5. 50	8. 76	13. 90	2. 68	3. 60
% Mortality Laying House - Ave.			5. 82		22. 40		12. 28		8. 14	
Range Group	-	1	0. 00	2. 91	14. 00	18. 20	1. 90	7. 09	2. 50	5. 32
"	"	- 2	2. 92	5. 82	18. 21	22. 40	7. 10	12. 28	5. 33	8. 14
"	"	- 3	5. 83	9. 41	22. 41	27. 20	12. 29	19. 69	8. 15	11. 72
"	"	- 4	9. 42	13. 00	27. 21	32. 00	19. 70	27. 10	11. 73	15. 30
Egg Size - Average			24. 63		24. 92		25. 53		25. 09	
Range Group	-	1	25. 10	24. 86	25. 60	25. 26	26. 90	26. 21	25. 90	25. 49
"	"	- 2	24. 85	24. 63	25. 25	24. 92	26. 20	25. 53	25. 48	25. 09
"	"	- 3	24. 62	24. 36	24. 91	24. 66	25. 52	24. 71	25. 08	24. 54
"	"	- 4	24. 35	24. 10	24. 65	24. 40	24. 70	23. 90	24. 53	24. 40
% Large & Extra Large Eggs - Ave.			61. 26		72. 70		69. 22		74. 91	
Range Group	-	1	67. 80	64. 53	79. 40	76. 05	85. 40	77. 31	82. 10	78. 50
"	"	- 2	64. 52	61. 26	76. 04	72. 70	77. 30	69. 22	78. 49	74. 91
"	"	- 3	61. 25	56. 53	72. 69	69. 05	69. 21	56. 91	74. 90	69. 50
"	"	- 4	56. 52	51. 80	69. 04	65. 40	56. 90	44. 60	69. 49	64. 10
Pounds Feed Per Pound Eggs - Ave.			3. 066		2. 792		3. 177		2. 885	
Range Group	-	1	2. 780	2. 923	2. 720	2. 756	2. 920	3. 049	2. 690	2. 788
"	"	- 2	2. 924	3. 066	2. 757	2. 792	3. 050	3. 177	2. 789	2. 885
"	"	- 3	3. 067	3. 173	2. 793	2. 806	3. 178	3. 659	2. 886	3. 228
"	"	- 4	3. 174	3. 280	2. 807	2. 820	3. 660	4. 140	3. 229	3. 570
Albumen-Haugh Units - Ave.			73. 48		79. 52		78. 94		76. 26	
Range Group	-	1	76. 40	74. 94	81. 50	80. 51	84. 70	81. 82	82. 20	79. 23
"	"	- 2	74. 93	73. 48	80. 50	79. 52	81. 81	78. 94	79. 22	76. 26
"	"	- 3	73. 47	71. 04	79. 51	78. 21	78. 93	74. 77	76. 25	74. 13
"	"	- 4	71. 03	68. 60	78. 20	76. 90	74. 76	70. 60	74. 12	72. 00
Blood Spots - All Sizes - Ave.			4. 81		1. 40		3. 27		6. 78	
Range Group	-	1	1. 90	3. 36	1. 00	1. 20	1. 30	2. 29	2. 90	4. 84
"	"	- 2	3. 37	4. 81	1. 21	1. 40	2. 30	3. 27	4. 85	6. 78
"	"	- 3	4. 82	6. 31	1. 41	1. 80	3. 28	6. 79	6. 79	9. 19
"	"	- 4	6. 32	7. 80	1. 81	2. 20	6. 80	10. 30	9. 20	11. 60



Trait Measured	Central Canada		Florida		Iowa		Kansas	
Net Income Over Feed and Chick								
Costs Per Pullet Housed - Ave.	\$1.114		\$3.696		.....		\$0.998	
Range Group - 1	\$1.730	1.422	\$4.520	4.108	.....	.....	\$1.160	1.079
" " - 2	1.421	1.114	4.107	3.696	.....	.....	1.078	0.998
" " - 3	1.113	0.527	3.695	3.168	.....	.....	0.997	0.784
" " - 4	0.526	-0.060	3.167	2.640	.....	.....	0.783	0.570
Eggs Per Pullet Housed - Ave.	196.74		257.18		192.40		212.30	
Range Group - 1	231.00	213.87	287.30	282.24	199.60	196.00	226.90	219.60
" " - 2	213.86	196.74	272.23	257.18	195.99	192.40	219.59	212.30
" " - 3	196.73	172.27	257.17	243.34	192.39	185.30	212.29	202.55
" " - 4	172.26	147.80	243.33	229.50	185.29	178.20	202.54	192.80
Days to 50% Production - Ave.	174.8		168.5		179.4		187.3	
Range Group - 1	161.0	167.9	161.0	164.8	168.0	173.7	175.0	181.2
" " - 2	168.0	174.8	164.9	168.5	173.8	179.4	181.3	187.3
" " - 3	174.9	181.9	168.6	176.3	179.5	183.2	187.4	194.2
" " - 4	182.0	189.0	176.4	184.0	183.3	187.0	194.3	201.0
% Mortality Growing Period - Ave.	2.23		2.84		11.20		4.69	
Range Group - 1	0.00	1.12	0.00	1.42	6.90	9.05	3.70	4.20
" " - 2	1.13	2.23	1.43	2.84	9.06	11.20	4.21	4.69
" " - 3	2.24	3.62	2.85	9.62	11.21	13.00	4.70	5.60
" " - 4	3.63	5.00	9.63	16.40	13.01	14.80	5.61	6.50
% Mortality Laying House - Ave.	17.86		9.28		17.34		11.73	
Range Group - 1	5.40	11.63	5.00	7.14	13.50	15.42	7.90	9.82
" " - 2	11.64	17.86	7.15	9.28	15.43	17.34	9.83	11.73
" " - 3	17.87	27.63	9.29	14.74	17.35	19.32	11.74	13.62
" " - 4	27.64	37.40	14.75	20.20	19.33	21.30	13.63	15.50
Egg Size - Average	24.71		25.03		24.76		25.34	
Range Group - 1	25.80	25.25	26.50	25.76	25.30	25.03	25.80	25.57
" " - 2	25.24	24.71	25.75	25.03	25.02	24.76	25.56	25.34
" " - 3	24.70	24.05	25.02	24.56	24.75	24.48	25.33	25.07
" " - 4	24.04	23.40	24.55	24.10	24.47	24.20	25.06	24.80
% Large & Extra Large Eggs - Ave.	65.44		77.16		66.10		72.58	
Range Group - 1	77.30	71.37	86.70	81.93	75.70	70.90	78.60	75.59
" " - 2	71.36	65.44	81.92	77.16	70.89	66.10	75.58	72.58
" " - 3	65.43	56.32	77.15	72.73	66.09	60.15	72.57	69.59
" " - 4	56.31	47.20	72.72	68.30	60.14	54.20	68.58	64.60
Pounds Feed Per Pound Eggs - Ave.	3.075		2.663		.....		2.861	
Range Group - 1	2.720	2.898	2.380	2.522	.....	.....	2.730	2.796
" " - 2	2.899	3.075	2.523	2.663	.....	.....	2.797	2.861
" " - 3	3.076	3.403	2.664	2.847	.....	.....	2.862	2.981
" " - 4	3.404	3.730	2.848	3.030	.....	.....	2.982	3.100
Albumen - Haugh Units - Ave.	72.29		81.02		80.84		81.63	
Range Group - 1	79.00	75.64	86.00	83.51	85.80	83.32	86.70	84.16
" " - 2	75.63	72.29	83.50	81.02	83.31	80.84	84.15	81.63
" " - 3	72.28	70.09	81.01	78.76	80.83	78.57	81.62	80.41
" " - 4	70.08	67.90	78.75	76.50	78.56	76.30	80.40	79.20
Blood Spots - All Sizes - Ave.	4.55		4.12		3.77		5.24	
Range Group - 1	1.40	2.98	1.30	2.71	1.10	2.44	3.80	4.52
" " - 2	2.99	4.55	2.72	4.12	2.45	3.77	4.53	5.24
" " - 3	4.56	6.53	4.13	6.51	3.78	4.79	5.25	5.97
" " - 4	6.54	8.50	6.52	8.90	4.80	5.80	5.98	6.70



Trait Measured			Minnesota		Missouri		New Brunswick		New Hampshire	
Net Income Over Feed and Chick										
Costs Per Pullet Housed - Ave.			\$1.148		\$1.848		\$1.769		\$2.128	
Range Group	-	1	\$1.600	1.374	\$2.430	2.139	\$2.620	2.194	\$2.830	2.479
"	"	- 2	1.373	1.148	2.138	1.848	2.193	1.769	2.478	2.128
"	"	- 3	1.147	0.689	1.847	1.584	1.768	1.419	2.127	1.774
"	"	- 4	0.688	0.230	1.583	1.320	1.418	1.070	1.773	1.420
Eggs Per Pullet Housed - Ave.			214.22		225.22		222.64		218.14	
Range Group	-	1	233.50	233.86	246.00	235.81	263.90	243.27	246.90	232.52
"	"	- 2	223.85	214.22	235.80	225.63	243.26	222.64	232.51	218.14
"	"	- 3	214.21	192.51	225.62	211.96	222.63	204.52	218.13	207.22
"	"	- 4	192.50	170.80	211.95	198.30	204.51	186.40	207.21	196.30
Days to 50% Production - Ave.			172.6		169.9		166.9		182.7	
Range Group	-	1	166.0	169.3	155.0	162.5	156.0	161.5	174.0	178.4
"	"	- 2	169.4	172.6	162.6	169.9	161.6	166.9	178.5	182.7
"	"	- 3	172.7	180.8	170.0	176.0	167.0	175.0	182.8	185.4
"	"	- 4	180.9	189.0	176.1	182.0	175.1	183.0	185.5	188.0
% Mortality Growing Period - Ave.			2.36		3.12		2.32		3.59	
Range Group	-	1	0.00	1.18	0.00	1.56	0.00	1.16	1.80	2.70
"	"	- 2	1.19	2.36	1.57	3.12	1.17	2.32	2.71	3.59
"	"	- 3	2.37	4.28	3.13	5.66	2.33	7.61	3.60	5.10
"	"	- 4	4.29	6.20	5.67	8.20	7.62	12.90	5.11	6.60
% Mortality Laying House - Ave.			13.38		12.13		10.33		8.26	
Range Group	-	1	5.00	9.19	5.00	8.57	4.70	7.52	3.70	5.98
"	"	- 2	9.20	13.38	8.58	12.13	7.53	10.33	5.99	8.26
"	"	- 3	13.39	21.69	12.14	18.57	10.34	14.42	8.27	11.83
"	"	- 4	21.70	30.00	18.58	25.00	14.43	18.50	11.84	15.40
Egg Size - Average			25.49		24.96		25.21		25.66	
Range Group	-	1	26.50	25.99	27.30	26.13	26.80	26.00	27.10	26.38
"	"	- 2	25.98	25.49	26.12	24.96	25.99	25.21	26.37	25.66
"	"	- 3	25.48	25.04	24.95	24.23	25.20	24.90	25.65	25.08
"	"	- 4	25.03	24.60	24.22	23.50	24.89	24.60	25.07	24.50
% Large & Extra Large Eggs - Ave.			80.48		76.37		63.83		80.33	
Range Group	-	1	86.50	83.49	92.90	84.63	80.10	71.96	92.20	86.26
"	"	- 2	83.48	80.48	84.62	76.37	71.95	63.83	86.25	80.33
"	"	- 3	80.47	75.89	76.36	68.58	63.82	60.01	80.32	73.56
"	"	- 4	75.88	71.30	68.57	60.80	60.00	56.20	73.55	66.80
Pounds Feed Per Pound Eggs - Ave.			3.351		3.175		2.752		3.059	
Range Group	-	1	3.140	3.246	2.980	3.078	2.480	2.616	2.630	2.845
"	"	- 2	3.247	3.351	3.079	3.175	2.617	2.752	2.846	3.059
"	"	- 3	3.352	3.666	3.176	3.363	2.753	2.876	3.060	3.265
"	"	- 4	3.667	3.980	3.364	3.550	2.877	3.000	3.266	3.470
Albumen - Haugh Units - Ave.			87.25		80.05		65.69		73.81	
Range Group	-	1	91.70	89.47	85.20	82.62	71.40	68.54	79.60	76.70
"	"	- 2	89.46	87.25	82.61	80.05	68.53	65.69	76.69	73.81
"	"	- 3	87.24	85.87	80.04	76.82	65.68	62.14	73.80	71.50
"	"	- 4	85.86	84.50	76.81	73.60	62.13	58.60	71.49	69.20
Blood Spots - All Sizes - Ave.			3.58		6.36		4.25		2.93	
Range Group	-	1	0.00	1.79	3.20	4.78	1.90	3.08	0.50	1.72
"	"	- 2	1.80	3.58	4.79	6.36	3.09	4.25	1.73	2.93
"	"	- 3	3.59	6.04	6.37	12.08	4.26	5.43	2.94	4.32
"	"	- 4	6.05	8.50	12.09	17.80	5.44	6.60	4.33	5.70

Trait Measured	New Jersey		Central New York		North Carolina		Pennsylvania	
Net Income Over Feed and Chick Costs Per Pullet Housed - Ave.	\$1.285		\$2.154		\$1.061		\$1.916	
Range Group - 1	\$1.810	1.547	\$3.550	2.852	\$1.790	1.425	\$2.520	2.218
" " - 2	1.546	1.285	2.851	2.154	1.424	1.061	2.217	1.916
" " - 3	1.284	0.981	2.153	1.572	1.060	0.740	1.915	1.598
" " - 4	0.986	0.690	1.571	0.990	0.739	0.420	1.597	1.280
Eggs Per Pullet Housed - Ave.	235.51		214.06		235.56		241.85	
Range Group - 1	257.80	246.65	255.60	234.83	273.90	254.73	274.30	258.07
" " - 2	246.64	235.51	234.82	214.06	254.72	235.56	258.06	241.85
" " - 3	235.50	225.05	214.05	192.33	235.55	208.13	241.84	228.02
" " - 4	225.04	214.60	192.32	170.60	208.12	180.70	228.01	214.20
Days to 50% Production - Ave.	170.0		177.8		165.5		173.8	
Range Group - 1	157.0	163.5	163.0	170.4	155.0	160.3	156.0	164.9
" " - 2	163.6	170.0	170.5	177.8	160.4	165.5	165.0	173.8
" " - 3	170.1	176.0	177.9	184.4	165.6	171.8	173.9	184.4
" " - 4	176.1	182.0	184.5	191.0	171.9	178.0	184.5	195.0
% Mortality Growing Period - Ave.	3.14		6.34		1.68		2.52	
Range Group - 1	0.00	1.57	0.00	3.17	0.00	0.84	1.10	1.81
" " - 2	1.58	3.14	3.18	6.34	0.85	1.68	1.82	2.52
" " - 3	3.15	6.12	6.35	10.67	1.69	2.99	2.53	5.06
" " - 4	6.13	9.10	10.68	15.00	3.00	4.30	5.07	7.60
% Mortality Laying House - Ave.	8.64		10.68		10.24		7.72	
Range Group - 1	0.00	4.32	0.00	5.34	1.00	5.62	0.00	3.86
" " - 2	4.33	8.64	5.35	10.68	5.63	10.24	3.87	7.72
" " - 3	8.65	13.32	10.69	18.34	10.25	22.62	7.73	15.91
" " - 4	13.33	18.00	18.35	26.00	22.63	35.00	15.92	24.10
Egg Size - Average	25.23		25.28		25.38		25.27	
Range Group - 1	26.30	25.76	27.10	26.19	26.80	26.09	27.30	26.28
" " - 2	25.75	25.23	26.18	25.28	26.08	25.38	26.27	25.27
" " - 3	25.22	24.71	25.27	24.59	25.37	25.14	25.26	24.33
" " - 4	24.70	24.20	24.58	23.90	25.13	24.90	24.32	23.40
% Large & Extra Large Eggs - Ave.	62.28		70.86		71.67		68.19	
Range Group - 1	75.40	68.84	85.30	78.08	82.30	76.98	80.30	74.24
" " - 2	68.83	62.28	78.07	70.86	76.97	71.67	74.23	68.19
" " - 3	62.27	53.54	70.85	61.13	71.66	68.83	68.18	57.54
" " - 4	53.53	44.80	61.12	51.40	68.82	66.00	57.53	46.90
Pounds Feed Per Pound Eggs - Ave.	2.873		2.896		2.810		2.697	
Range Group - 1	2.660	2.767	2.550	2.723	2.580	2.695	2.410	2.554
" " - 2	2.768	2.873	2.724	2.896	2.696	2.810	2.555	2.697
" " - 3	2.874	2.992	2.897	3.193	2.811	2.985	2.698	2.899
" " - 4	2.993	3.110	3.194	3.490	2.986	3.160	2.900	3.100
Albumen - Haugh Units - Ave.	83.00		77.84		76.45		78.06	
Range Group - 1	86.90	84.95	82.80	80.32	80.60	78.52	82.40	80.23
" " - 2	84.94	83.00	80.31	77.84	78.51	76.45	80.22	78.06
" " - 3	82.99	81.25	77.83	74.02	76.44	74.77	78.05	75.43
" " - 4	81.24	79.50	74.01	70.20	74.76	73.10	75.42	72.80
Blood Spots - All Sizes - Ave.	2.00		5.87		4.53		2.75	
Range Group - 1	0.00	1.00	1.20	3.54	0.50	2.52	0.40	1.58
" " - 2	1.01	2.00	3.55	5.87	2.53	4.53	1.57	2.75
" " - 3	2.01	3.00	5.88	8.84	4.54	6.42	2.76	4.43
" " - 4	3.01	4.00	8.85	11.80	6.43	8.30	4.44	6.10

Trait Measured			Rhode Island		Tennessee		Texas		Wisconsin	
Net Income Over Feed and Chick										
Costs Per Pullet Housed - Ave.			\$2.773		\$1.950		\$1.147		\$1.450	
Range Group	-	1	\$3.450	3.111	\$2.690	2.320	\$1.970	1.558	\$1.980	2.715
"	"	- 2	3.110	2.773	2.319	1.950	1.557	1.147	1.714	1.450
"	"	- 3	2.772	2.246	1.949	1.540	1.146	0.728	1.449	0.940
"	"	- 4	2.245	1.720	1.539	1.130	0.727	0.310	0.939	0.430
Eggs Per Pullet Housed - Ave.			235.20		216.51		194.26		221.50	
Range Group	-	1	257.10	246.15	245.20	230.85	233.10	213.68	248.90	235.20
"	"	- 2	246.14	235.20	230.84	216.51	213.67	194.26	235.19	221.50
"	"	- 3	235.19	218.40	216.50	200.50	194.25	175.28	221.49	199.60
"	"	- 4	218.39	201.60	200.49	184.50	175.27	156.30	199.59	177.70
Days to 50% Production - Ave.			169.2		163.5		186.1		168.3	
Range Group	-	1	162.0	165.6	154.0	158.8	171.0	178.6	154.0	161.2
"	"	- 2	165.7	169.2	158.9	163.5	178.7	186.1	161.3	168.3
"	"	- 3	169.3	172.1	163.6	168.8	186.2	195.1	168.4	175.7
"	"	- 4	172.2	175.0	168.9	174.0	195.2	204.0	175.8	183.0
% Mortality Growing Period - Ave.			5.08		13.28		3.54		4.12	
Range Group	-	1	0.00	2.54	5.20	9.24	0.00	1.77	1.11	2.61
"	"	- 2	2.55	5.08	9.25	13.28	1.78	3.54	2.62	4.12
"	"	- 3	5.09	11.14	13.29	19.14	3.55	6.77	4.13	7.06
"	"	- 4	11.15	17.20	19.15	25.00	6.78	10.00	7.07	10.00
% Mortality Laying House - Ave.			8.54		10.39		8.73		20.41	
Range Group	-	1	0.00	4.27	1.70	6.05	0.00	4.37	5.70	13.06
"	"	- 2	4.28	8.54	6.06	10.39	4.38	8.73	13.07	20.41
"	"	- 3	8.55	13.97	10.40	18.55	8.74	12.72	20.42	28.81
"	"	- 4	13.98	10.40	18.56	26.70	12.73	16.70	28.82	37.20
Egg Size - Average			25.24		25.15		25.19		24.14	
Range Group	-	1	27.10	26.17	26.30	25.67	26.00	25.59	25.70	24.92
"	"	- 2	26.16	25.24	25.66	25.15	25.58	25.19	24.91	24.14
"	"	- 3	25.23	24.47	25.14	24.42	25.18	24.79	24.13	23.47
"	"	- 4	24.46	23.70	24.41	23.70	24.78	24.40	23.46	22.80
% Large & Extra Large Eggs - Ave.			79.69		80.95		59.98		74.30	
Range Group	-	1	93.40	86.54	87.30	84.12	71.10	65.54	87.10	80.70
"	"	- 2	86.53	79.69	84.11	80.95	65.53	59.98	80.69	74.30
"	"	- 3	79.68	71.29	80.94	72.42	59.97	53.39	74.29	66.20
"	"	- 4	71.28	62.90	72.41	63.90	53.38	46.80	66.19	58.10
Pounds Feed Per Pound Eggs - Ave.			3.349		2.821		2.834		3.032	
Range Group	-	1	2.990	3.170	2.530	2.676	2.570	2.702	2.740	2.886
"	"	- 2	3.171	3.349	2.677	2.821	2.703	2.834	2.887	3.032
"	"	- 3	3.350	3.720	2.822	3.041	2.835	3.117	3.033	3.266
"	"	- 4	3.721	4.090	3.042	3.260	3.118	3.400	3.267	3.500
Albumen - Haugh Units - Ave.			75.72		72.04		81.03		79.34	
Range Group	-	1	79.50	77.61	80.50	76.27	87.10	84.06	86.20	82.77
"	"	- 2	77.60	75.72	76.26	72.04	84.05	81.03	82.76	79.34
"	"	- 3	75.71	74.51	72.03	69.57	81.02	79.06	79.33	76.32
"	"	- 4	74.50	73.30	69.56	67.10	79.05	77.10	76.31	73.30
Blood Spots - All Sizes - Ave.			3.94		5.07		3.27		3.59	
Range Group	-	1	0.70	2.32	1.40	3.24	0.80	2.04	2.00	2.80
"	"	- 2	2.33	3.94	3.25	5.07	2.05	3.27	2.81	3.59
"	"	- 3	3.75	5.47	5.08	8.09	3.28	5.29	3.60	4.65
"	"	- 4	5.48	7.00	8.10	11.10	5.30	7.30	4.66	5.70

RANGE GROUP RANK OF ENTRIES IN RANDOM SAMPLE EGG PRODUCTION TEST

ENTRY IDENTIFICATION		TEST	BREEDING	STRAIN OR TRADE NAME	INCOME OVER FEE AND CHICK COST (\$)	EGG PRO- DUCTION (Hen housed)	AGE AT PRO- DUCTION (Days)	GROWING MORTALITY (%)	LAYING MORTALITY (%)	EGG WEIGHT (oz)	LARGE AND EXTRA LARGE EGGS (%)	EGGS PROD OF 775 (lbs)	ALBUMEN QUALITY (H.U.)	BLOOD SPOTS (%)
Andrews, J. J., R. R. #3, Chiliwack, B. C.		B. C.	WL	SX	Andrews	2	2	4	2	3	2	1	1	1
Andrews, B. C.		C. C.	WL	SX	Andrews	1	2	3	1	2	2	2	1	1
Animal Research Institute, Ottawa, Ontario														
A. R. I., Ont.		C. C.	WL	PS	Random Bred	4	4	4	3	4	4	4	2	3
A. R. I., Ont.		C. C.	WL	PS	Random Bred	4	4	4	4	4	4	4	2	3
Animal Research Institute, Kentville, Nova Scotia														
A. R. I., N.S.		B. C.	WL	PS	Kentville R. B. C.	3	3	2	3	3	3	3	2	3
A. R. I., N.S.		C. C.	WL	PS	Kentville R. B. C.	1	2	3	2	1	2	1	2	4
A. R. I., N.S.		C. C.	WL	PS	Kentville R. B. C.	2	2	2	3	2	2	2	3	3
A. R. I., N.S.		N. B.	WL	PS	Kentville R. B. C.	3	2	2	1	1	4	2	2	3
Anthony, Geo. M. & Sons, Strausstown, Penna.														
Anthony, Penna.		Mo.	WL	SX	Anthony	2	2	3	2	1	3	3	2	1
Anthony, Penna.		N. J.	WL	SX	Anthony	4	4	3	1	1	3	4	1	2
Anthony, Penna.		CNY	WL	SX	Anthony	2	2	3	3	2	2	2	1	2
Anthony, Penna.		Penna.	WL	SX	Anthony	2	2	2	1	1	3	2	2	2
Anthony, Penna.		R. I.	WL	SX	Anthony	2	2	3	2	3	3	2	1	1
Anthony, Penna.		Tenn.	WL	SX	Anthony	3	2	4	4	2	3	2	3	1
Anthony, Penna.		Wisc.	WL	SX	Anthony	3	3	3	2	4	3	2	2	2
Arbor Acres Farm, Inc., Glastonbury, Conn.														
Pratt, Arizona		Ariz.	WL	SX	Queen	2	3	4	4	3	2	1	4	1
Arbor Acres, Conn. (A.A. Calif.)		Cal.	WL	SX	Queen	2	3	4	3	2	2	2	2	4
Arbor Acres, Conn. (A.A. Midwest, Ind.)		Iowa	WL	SX	Queen	1	4	2	3	3	4	4	2	4
Arbor Acres, Conn. (A.A. SW, Ark.)		Kansas	WL	SX	Queen	4	4	4	4	4	4	4	3	4
Arbor Acres, Conn. (Jack Frost, Minn.)		Minn.	WL	SX	Queen	3	2	4	3	3	3	2	2	4
Arbor Acres, Conn. (A.A. SW, Ark.)		Mo.	WL	SX	Queen	3	4	4	4	3	2	2	1	3
Arbor Acres, Conn.		N. H.	WL	SX	Queen	4	3	3	3	3	4	4	2	2
Arbor Acres, Conn. (A.A., Mass.)		N. J.	WL	SX	Queen	2	3	4	2	3	2	3	3	4
Arbor Acres, Conn.		CNY	WL	SX	Queen	2	3	3	2	2	2	2	2	4
Arbor Acres, Conn. (A.A., NC.)		N. C.	WL	SX	Queen	3	3	4	3	3	3	2	1	4
Arbor Acres, Conn.		Penna.	WL	SX	Queen	2	3	3	1	3	3	2	3	3
Arbor Acres, Conn.		Texas	WL	SX	Queen	3	4	4	2	4	2	3	2	3
Arbor Acres, Conn. (A.A. Midwest, Ind.)		Wisc.	WL	SX	Queen	1	1	3	3	2	2	2	2	4



RANGE GROUP RANK OF ENTRIES IN RANDOM SAMPLE EGG PRODUCTION TEST (Continued)

ENTRY IDENTIFICATION	TEST	BREEDING	STRAIN OR TRADENAME	INCOME OVER FEED AND CHICK COST (\$)	EGG PRO- DUCTION (No.)	AGE AT 50% PRO- DUCTION (Days)	GROWING MORTALITY (%)	LAYING MORTALITY (%)	EGG WEIGHT (oz)	LARGE AND EXTRA LARGE EGGS (%)	FEED PER POUND OF EGGS (lbs)	ALBUMEN QUALITY (H.U.)	BLOOD SPOTS (%)
Babcock Poultry Farm, Inc., Ithaca, New York													
Babcock, N. Y. (Stewart, Alberta) .....	Alta.	WL	Babcock B-300	1	1	1	2	2	1	1	1	3	1
Babcock, N. Y. (Nanaimo, B. C.) .....	B. C.	WL	Babcock B-300	2	2	1	2	2	1	2	2	3	2
Babcock, N. Y. (Hogsett, Calif.) .....	Calif.	WL	Babcock B-300	2	3	1	4	3	3	3	2	4	3
Babcock, N. Y. ....	C. C.	WL	Babcock B-300	1	1	1	2	1	3	3	1	3	3
Hodges, Florida	Fla.	WL	Babcock B-300	2	2	1	1	2	3	3	3	4	2
Gulf Coast, Florida	Fla.	WL	Babcock B-300	1	1	1	2	1	2	2	1	4	3
Babcock, N. Y. (Nelson's, Kan.) .....	Kan.	WL	Babcock B-300	1	1	1	3	3	3	3	2	4	3
Babcock, N. Y. (Mettlings, Minn.) .....	Minn.	WL	Babcock B-300	1	1	1	3	3	2	3	1	4	4
Babcock, N. Y. ....	Mo.	WL	Babcock B-300	1	1	1	1	3	3	3	1	3	3
Babcock, N. Y. ....	N. H.	WL	Babcock B-300	1	1	1	2	2	3	3	1	3	1
Babcock, N. Y. (Babcock, Penna.) .....	N. J.	WL	Babcock B-300	1	1	1	3	1	2	1	1	4	3
Babcock, N. Y. ....	CNY	WL	Babcock B-300	1	1	1	3	1	2	2	1	3	2
Babcock, N. Y. (Harrold's, Ga.) .....	N. C.	WL	Babcock B-300	1	1	1	1	1	2	2	1	4	3
Babcock, Penna.	Penna.	WL	Babcock B-300	1	1	2	3	2	3	3	1	3	3
Babcock, N. Y. ....	R. I.	WL	Babcock B-300	1	1	1	1	3	1	3	1	4	4
Babcock, N. Y. ....	Tenn.	WL	Babcock B-300	1	1	1	1	2	2	3	1	3	2
Babcock, N. Y. ....	Texas	WL	Babcock B-300	1	1	1	3	3	2	2	1	3	3
Babcock, N. Y. (Rasmusson, Wisc.) .....	Wisc.	WL	Babcock B-300	2	1	2	3	1	3	2	2	3	1
Babcock Poultry Farm, Inc., Ithaca, New York													
Babcock, N. Y. (Hogsett, Calif.) .....	Calif.	CGxWL	Babcock B-370	2	2	1	4	3	2	3	2	4	2
Babcock, N. Y. ....	Mo.	CGxWL	Babcock B-370	2	1	1	2	1	3	3	2	4	1
Babcock, N. Y. ....	CNY	CGxWL	Babcock B-370	3	3	1	3	3	3	3	3	4	2
Babcock, N. Y. ....	Tenn.	CGxWL	Babcock B-370	2	2	1	1	1	2	3	3	4	2
Babcock, N. Y. ....	Texas	CGxWL	Babcock B-370	2	1	1	2	1	3	3	2	4	2
Babcock, N. Y. (Peck's, Wisc.) .....	Wisc.	CGxWL	Babcock B-370	2	1	1	3	1	3	3	2	4	3
Beamsdale Farm, Lawndale, North Carolina													
Beamsdale, N. C.	Mo.	WL	Beamsdale 66	4	4	3	2	4	4	4	3	2	1
Beamsdale, N. C.	N. C.	WL	Beamsdale 66	4	3	3	2	3	4	3	3	3	3
Booth Farms & Hatchery, Clinton, Missouri													
Booth, Mo.	Mo.	INX	Booth Line 351	4	4	2	1	4	3	4	3	2	3
Booth Farms & Hatchery, Clinton, Missouri													
Booth, Mo.	Mo.	INX	Booth Line 352	2	2	2	4	3	4	3	1	3	3

RANGE GROUP RANK OF ENTRIES IN RANDOM SAMPLE EGG PRODUCTION TEST (Continued)

ENTRY IDENTIFICATION		TEST	BREEDING	STRAIN OR TRADENAME	INCOME OVER FEE COO CHICK (\$)	EGG PRO- DUCTION (Hen housed)	AGE AT 90% PRO- DUCTION (Days)	GROWING MORTALITY (%)	LAYING MORTALITY (%)	EGG WEIGHT (oz)	LARGE AND EXTRA LARGE EGGS (%)	PER FOUN- D OF EGGS (lbs)	ALBUMEN QUALITY (H.U.)	BLOOD SPOTS (%)
Brender's Leghorns, Ferndale, N. Y.														
Brender, N. Y.	.....	Mo.	WL	SX	Money Maker	4	4	2	2	2	2	4	2	1
Brender, N. Y.	.....	N. J.	WL	SX	Money Maker	3	4	4	3	2	2	3	2	4
Brender, N. Y.	.....	CNY	WL	SX	Money Maker	3	3	4	2	3	2	3	3	2
Brender, N. Y.	.....	CNY	WL	SX	Money Maker	4	4	4	2	2	2	3	2	3
Brender, N. Y.	.....	R. I.	WL	SX	Money Maker	2	3	4	1	2	3	2	1	3
Brender, N. Y.	.....	Tenn.	WL	SX	Money Maker	2	3	4	1	3	2	2	2	3
Burling Hatchery, Oxford, Pennsylvania														
Burling, Penna.	.....	Penna.	RIRxWR BX	Tri-Cross	2	3	3	4	3	2	2	4	2	3
Burpee, Arthur K., Woodstock, N. B.	.....	N. B.	WL	SX	Burpee #43	1	1	2	2	3	2	1	2	2
Burpee, Arthur K., Woodstock, N. B.	.....	N. B.	WLx(RIRxLS)	Burpee #321	2	2	1	1	4	4	4	2	2	1
Cameron Leghorn Res. Farm, Beaver Springs, Penna.														
Cameron, Penna.	.....	Mo.	WL	SX	Cameron #924	3	3	4	3	3	2	3	2	1
Cameron, Penna.	.....	CNY	WL	SX	Cameron #924	2	2	2	2	2	2	2	2	1
Cameron, Penna.	.....	N. C.	WL	SX	Cameron #924	2	2	3	1	1	2	3	3	3
Cameron, Penna.	.....	Penna.	WL	SX	Cameron #924	2	2	3	1	3	3	2	3	3
Cameron, Penna.	.....	Tenn.	WL	SX	Cameron #924	1	2	3	2	2	2	2	2	3
Carey Farms, Marion, Ohio														
Carey, Ohio	.....	Mo.	WL	SX	E. J.'s	3	3	4	3	2	3	3	3	3
Carey, Ohio	.....	N. J.	WL	SX	E. J.'s	4	3	3	4	2	2	1	4	2
Carey, Ohio	.....	CNY	WL	SX	E. J.'s	3	3	3	4	3	3	3	1	2
Carey, Ohio	.....	Penna.	WL	SX	E. J.'s	2	2	3	2	1	2	2	3	2
Cashman Leghorn Farm, Webster, Kentucky														
Cashman, Ky.	.....	Mo.	WL	IN	Hi-Cash	2	1	2	2	3	3	3	3	3
Cashman, Ky.	.....	CNY	WL	IN	Hi-Cash	3	2	2	3	2	2	2	3	4
Cashman, Ky. (Ridgeway, Tenn.)	.....	N. C.	WL	IN	Hi-Cash	4	4	4	4	3	4	2	4	3
Cashman, Ky.	.....	Tenn.	WL	IN	Hi-Cash	2	2	4	4	2	2	1	2	2
Cashman, Ky.	.....	Texas	WL	IN	Hi-Cash	3	3	4	2	4	3	2	3	3
Cashman Leghorn Farms, Webster, Kentucky														
Cashman, Ky.	.....	Mo.	SYNxWL	INX	Astronauts	2	2	3	2	2	2	2	2	2
Childers Hatchery, Santa Ana, California														
Childers, Calif.	.....	Calif.	MSC	EGGsecutive III	3	3	2	3	3	1	1	2	4	3
Clark, H. R., Burt's Corner, New Brunswick	.....	C. C.	WL	SX	Clark's #57	1	2	4	1	1	3	2	1	2
Clark, N. B.	.....	N. B.	WL	SX	Clark's #57	2	2	3	4	2	4	3	1	2
Clark, N. B.	.....													



RANGE GROUP RANK OF ENTRIES IN RANDOM SAMPLE EGG PRODUCTION TEST (Continued)

ENTRY IDENTIFICATION	TEST	BREEDING	STRAIN OR TRADENAME	INCOME OVER FEED AND CHICK COST (\$)	EGG PRO- DUCTION (Hens housed)	AGE AT 50% PRO- DUCTION (Days)	GROWING MORTALITY (%)	LAYING MORTALITY (%)	EGG WEIGHT (G)	LARGE AND EXTRA LARGE EGGS (%)	FEED PER EGG (g/g)	ALBUMEN QUALITY (H.U.)	BLOOD SPOTS (%)
DeKalb Agricultural Asso., Sycamore, Illinois													
Ariz. Star, Ariz.	Ariz.	INX	DeKalb 151	4	4	3	2	4	1	1	4	2	3
DeKalb, Ill. (Holloway, Calif.)	Calif.	INX	DeKalb 151	2	3	3	2	2	1	1	1	3	3
DeKalb, Ill. (Heim's, Mo.)	Mo.	INX	DeKalb 151	3	3	3	3	2	2	2	1	3	2
DeKalb, Ill. (Card, Tenn.)	Tenn.	INX	DeKalb 151	3	3	3	1	2	2	1	2	2	2
Pierson-Craddock, Texas	Texas	INX	DeKalb 151	2	2	1	3	1	2	2	1	3	3
DeKalb, Ill. (Badger State, Wisc.)	Wisc.	INX	DeKalb 151	1	1	2	1	1	2	2	1	3	2
Demler Farms, Anaheim, California													
Demler, Calif.	B. C.	WL	Demler Regal	2	2	2	3	2	3	3	2	3	2
Demler, Calif.	Calif.	WL	Demler Regal	3	3	3	2	3	3	3	3	3	3
Demler, Calif. (Yeiser-Demler, Ky.)	Minn.	WL	Demler Regal	3	4	3	1	4	2	3	3	2	2
Demler, Calif.	Mo.	WL	Demler Regal	3	3	2	1	3	3	3	3	2	3
Demler, Calif. (Yeiser-Demler, Ky.)	CNY	WL	Demler Regal	3	4	3	1	4	3	3	2	1	3
Demler, Calif. (Raleigh, N.C.)	N. C.	WL	Demler Regal	2	2	2	2	2	4	4	2	2	3
Demler, Calif. (Wallis, Penna.)	Penna.	WL	Demler Regal	3	3	2	2	3	3	3	2	3	1
Yeiser-Demler, Ky.	Tenn.	WL	Demler Regal	3	3	2	2	3	3	3	2	4	2
Boothe, Texas	Texas	WL	Demler Regal	4	4	3	3	3	3	4	4	3	2
Demler, Calif.	Texas	WL	Demler Regal	3	3	3	3	3	3	3	3	3	2
Demler, Calif. (Yeiser-Demler, Ky.)	Wisc.	WL	Demler Regal	3	4	3	1	4	3	3	3	3	2
Demler Farms, Anaheim, California													
Demler, Calif.	Calif.	Synx WL	Demler Royal	3	3	2	1	3	2	2	3	3	4
Demler, Calif.	Mo.	Synx WL	Demler Royal	2	2	2	2	2	3	3	2	3	2
Demler, Calif. (Frank, N.J.)	N. J.	Synx WL	Demler Royal	3	3	1	1	3	2	3	3	3	4
deZeeuw Leghorn Breeder, South Edmonton, Alberta	Alta.	WL	deZeeuw 752	2	2	4	2	1	2	2	2	1	3
deZeeuw Leghorn Breeder, South Edmonton, Alberta	Alta.	WL	deZeeuw 752B	3	3	4	2	2	2	3	2	1	3
deZeeuw, Alta.	B. C.	WL	deZeeuw 752B	1	1	3	3	1	4	3	1	3	3
deZeeuw, Alta.	C. C.	WL	deZeeuw 752B	1	2	3	3	1	3	2	1	4	3
Eckert, Dr. B. Kutzath Yavneh, Post Hof Ashdod, Israel	R. I.	WL	Yavneh, Israel	2	2	2	2	1	4	4	3	3	4
Eckert, Israel													
Erath Egg Farm, Stephenville, Texas	Texas	INX	Erath Mestiza	2	2	1	3	4	4	4	1	4	4
Evans, W. D. Hatchery, Ltd., Northampton, England	Calif.	WL	Maxilay	3	2	4	4	3	4	4	2	1	3
Evans, England	R. I.	WL	Maxilay	2	2	4	3	3	3	3	1	1	3



RANGE GROUP RANK OF ENTRIES IN RANDOM SAMPLE EGG PRODUCTION TEST (Continued)

ENTRY IDENTIFICATION		TEST	BREEDING	STRAIN OR TRADENAME	INCOME OVER FEED AND CHICK COST (\$)	EGG PRO- DUCTION (No.)	AGE AT 90% PRO- DUCTION (Days)	GROWING MORTALITY (%)	LAYING MORTALITY (%)	EGG WEIGHT (oz)	LARGE AND EXTRA LARGE EGGS (%)	FEED PER POUND OF EGGS (lbs)	ALBUMEN QUALITY (H.U.)	BLOOD SPOTS (%)
Fisher Poultry Farm, Ayton, Ontario														
Fisher, Ont.	.....	B. C.	WL	SX	Fisher 103	3	3	1	3	2	3	2	3	2
Fisher, Ont.	.....	C. C.	WL	SX	Fisher 103	2	2	3	2	2	2	2	2	3
Fisher, Ont.	.....	N. B.	WL	SX	Fisher 103	4	3	2	4	4	4	2	3	4
Fisher Poultry Farm, Ltd., Ayton, Ontario														
Fisher, Ont.	.....	C. C.	WL x WW	BX	Fisher 303	2	2	1	3	2	1	2	3	4
Forsgate Farms, Jamesburg, N. J.														
Forsgate, N. J.	.....	N. J.	WL	SX	F 160	2	2	4	3	1	2	2	2	3
Forsgate, N. J.	.....	Penna.	WL	SX	F 160	3	3	4	3	1	2	2	3	1
Fox Den Farms, Cary, North Carolina														
Fox Den, N. C.	.....	N. C.	RIR	SX	Little Red Hen	3	3	4	3	2	2	3	3	1
Garber Poultry Breeding Farm, Modesto, California														
Garber, Calif. (Redline, B. C.)	.....	B. C.	WL	SX	G 200	2	2	3	3	1	1	1	1	2
Garber, Calif.	.....	Calif.	WL	SX	G 200	2	2	3	1	2	2	2	2	2
Orange Blossom, Fla.	.....	Fla.	WL	SX	G 200	3	3	3	2	2	2	3	1	2
Garber, Calif. (Fairfax, Minn.)	.....	Minn.	WL	SX	G 200	2	2	4	4	2	2	1	2	4
Garber, Calif.	.....	N. J.	WL	SX	G 200	1	2	2	3	4	2	1	1	1
Garber, Calif.	.....	CNY	WL	SX	G 200	2	2	2	3	3	2	2	1	2
Garber, Calif.	.....	Penna.	WL	SX	G 200	3	3	3	1	3	2	2	1	3
Garber, Calif.	.....	Texas	WL	SX	G 200	2	2	3	3	2	1	2	1	1
Garber, Calif.	.....	Wisc.	WL	SX	G 200	2	3	3	1	3	2	1	2	1
Garber Poultry Breeding Farm, Modesto, California														
Garber, Calif.	.....	Calif.	CG x WL	BX	G x 291	2	2	1	2	3	1	2	3	2
Garber, Calif.	.....	Mo.	CG x WL	BX	G x 291	1	1	2	3	2	2	1	3	2
Garber, Calif.	.....	Penna.	CG x WL	BX	G x 291	3	3	2	2	3	3	2	4	1
Garber, Calif.	.....	Tenn.	CG x WL	BX	G x 291	3	2	1	4	2	2	3	2	2
Gardiner, D., Cloverdale, B. C.														
Gardiner, B. C.	.....	Alta.	WL x (WL x BA)	Kanaka White	3	4	3	3	4	1	2	3	3	2
Gardiner, B. C.	.....	B. C.	WL x (WL x BA)	Kanaka White	3	4	4	4	4	2	2	3	3	1
Gardiner, B. C.	.....	C. C.	WL x (WL x BA)	Kanaka White	3	3	3	1	4	2	2	2	4	1
Gardiner, B. C.	.....	N. B.	WL x (WL x BA)	Kanaka White	4	4	2	1	4	3	3	4	4	1
Gardiner, D., Cloverdale, B. C.														
Gardiner, B. C.	.....	Alta.	WL x (WL x BA)	Monarch	3	4	3	2	3	3	2	3	4	1
Gardiner, B. C.	.....	B. C.	WL x (WL x BA)	Monarch	3	4	3	1	3	2	2	3	3	3
Gardiner, B. C.	.....	C. C.	WL x (WL x BA)	Monarch	3	4	3	3	4	2	2	3	3	2

RANGE GROUP RANK OF ENTRIES IN RANDOM SAMPLE EGG PRODUCTION TEST (Continued)

ENTRY IDENTIFICATION		TEST	BREEDING	STRAIN OR TRADENAME	INCOME AND CHICK FEED COST (\$)	EGG PRO- DUCTION (Hens housed)	AGE AT 50% PRO- DUCTION (Days)	GROWING MORTALITY (%)	LAYING MORTALITY (%)	EGG WEIGHT (oz)	LARGE AND EXTRA LARGE EGGS (%)	FEED PER POUND OF EGGS (lbs)	ALBUMEN QUALITY (H.U.)	BLOOD SPOTS (%)	
Garrison, Earl W., Bridgeton, New Jersey		N. H.	RIRxWR	BX	Golden Sex Link	2	3	3	2	2	2	1	3	2	3
Garrison, N. J.		Penna.	RIRxWR	BX	Golden Sex Link	3	3	2	3	1	1	1	3	2	3
Garrison, N. J.															
Gasson's Poultry Farm, Versailles, Ohio		Mo.	WL	SX	G 33	2	3	4	2	3	3	3	2	2	2
Gasson, Ohio		Wisc.	WL	SX	G 33	2	2	3	1	1	3	3	2	2	3
Gasson, Ohio															
Gastley's Poultry Farm, Anoka, Minnesota		Penna.	WL	SX	Ghostley Pearl	2	2	3	2	2	2	2	1	3	3
Wheelock, Penna.															
Ghostley's Poultry Farm, Inc., Anoka, Minnesota		Calif.	WL	SX	Ghostley Pearl 63	3	2	1	2	3	3	3	1	2	2
Ghostley, Minn.		C. C.	WL	SX	Ghostley Pearl 63	3	3	3	1	3	2	2	3	1	1
Ghostley, Minn.		Iowa	WL	SX	Ghostley Pearl 63	1	2	3	3	1	1	1	1	3	3
Ghostley, Minn.		Kan.	WL	SX	Ghostley Pearl 63	1	1	1	3	1	2	3	1	3	3
Ghostley, Minn.		Minn.	WL	SX	Ghostley Pearl 63	2	2	1	3	2	2	2	1	1	1
Ghostley, Minn.		Mo.	WL	SX	Ghostley Pearl 63	2	2	2	3	2	2	2	1	1	1
Ghostley, Minn.		N. H.	WL	SX	Ghostley Pearl 63	4	2	2	4	3	3	3	2	1	2
Ghostley, Minn.		N. J.	WL	SX	Ghostley Pearl 63	2	2	2	4	3	2	3	2	1	3
Ghostley, Minn. (Beamsdale, N. C.)		N. C.	WL	SX	Ghostley Pearl 63	4	3	3	3	3	3	3	4	1	3
Ghostley, Minn.		R. I.	WL	SX	Ghostley Pearl 63	1	2	3	4	3	3	1	1	4	4
Ghostley, Minn.		Tenn.	WL	SX	Ghostley Pearl 63	4	4	3	1	4	1	2	3	1	2
Ghostley, Minn.		Texas	WL	SX	Ghostley Pearl 63	3	3	2	1	3	2	3	3	1	3
Ghostley, Minn.		Wisc.	WL	SX	Ghostley Pearl 63	1	1	2	3	2	2	2	2	1	3
Goertz & Kruger Poultry Br. Farm, Dinuba, California		Calif.	WL	SX	White Leghorn	2	2	3	2	3	2	2	2	3	1
Goertz & Kruger, Calif.															
Graton, A., Two Mountains, Quebec		C. C.	WL	SX	Oka 93	2	2	3	3	2	1	1	2	3	2
Graton, Quebec															
Hansen's Leghorn City, Puyallup, Washington		B. C.	WL	SX	Criss Cross H 25	3	3	4	1	2	3	2	2	2	2
Hansen's, Wash. (Oliver, B. C.)		Mo.	WL	SX	Criss Cross H 25	2	3	3	2	2	3	2	3	2	3
Hansen, Wash.		Penna.	WL	SX	Criss Cross H 25	3	3	3	2	2	3	3	3	3	3
Hansen, Wash.		Tenn.	WL	SX	Criss Cross H 25	2	2	2	2	1	2	1	2	2	3
Hansen, Wash. (Young's Wisc.)		Wisc.	WL	SX	Criss Cross H 25	3	3	4	3	1	2	3	3	3	4
Hanson, J. A. & Son, Corvallis, Oregon		Mo.	WL	SX	Super Nick A	4	4	2	2	4	4	4	3	1	3
Hanson, Oregon		N. J.	WL	SX	Super Nick A	4	4	2	2	4	4	4	4	2	1
Hanson, Oregon		N. Y.	WL	SX	Super Nick A	4	4	3	3	3	4	4	3	1	4

RANGE GROUP RANK OF ENTRIES IN RANDOM SAMPLE EGG PRODUCTION TEST (Continued)

ENTRY IDENTIFICATION		TEST	BREEDING		STRAIN OR TRADENAME	INCOME OVER FEED AND CHICK CDST (\$)	EGG PRO- DUCTION (Hens housed)	AGE AT 50% PRO- DUCTION (Days)	GRDWING MORTALITY (%)	LAYING MORTALITY (%)	EGG WEIGHT (oz)	LARGE AND EXTRA LARGE EGGS (%)	FEED PER POUND OF EGGS (lbs)	ALBUMEN QUALITY (H.U.)	BLDGS SPDTS (%)
Harco Orchards & Poultry Farm, So. Easton, Massachusetts															
Harco, Mass.		N. H.	RUR	PS	Group I	4	4	4	3	2	4	3	4	2	1
Harco, Mass.		N. C.	RUR	PS	Group I	2	1	2	3	1	2	2	3	3	1
Harco Orchards & Poultry Farm, So. Easton, Massachusetts															
Harco, Mass.		Mo.	RURxBPR		Sex Link	1	1	2	2	2	1	1	1	2	4
Harco, Mass.		N. B.	RURxBPR		Sex Link	1	1	1	1	1	1	1	3	2	2
Harco, Mass.		N. H.	RURxBPR		Sex Link	1	1	2	1	1	1	1	2	2	3
Harco, Mass.		CNY	RURxBPR		Sex Link	1	1	1	1	2	1	1	1	3	1
Harco, Mass.		Penna.	RURxBPR		Sex Link	3	3	3	3	3	1	1	4	3	2
Harco, Mass.		R. I.	RURxBPR		Sex Link	3	3	1	1	2	1	1	4	2	3
Hardy, C. Nelson & Son, Essex, Massachusetts															
Hardy, Mass.		N. H.	RURxBPR		Sex Link	2	3	3	2	2	2	2	3	3	4
Heisdorf & Nelson Farms, Kirkland, Washington															
H & N, Wash. (Krieger, B. C.)		B. C.	WL	SX	Nick Chick	3	3	2	1	3	2	2	2	2	3
H & N, Wash. (H & N, Calif.)		Calif.	WL	SX	Nick Chick	1	1	3	2	1	1	1	1	1	1
Frizzell, Fla.		Fla.	WL	SX	Nick Chick	2	2	2	1	2	2	2	2	2	3
Pine Acres, Fla.		Fla.	WL	SX	Nick Chick	2	2	2	2	3	3	3	2	2	3
Oak Crest, Fla.		Fla.	WL	SX	Nick Chick	2	2	2	1	3	3	2	3	2	3
H & N, Wash. (Linn Grove, Iowa)		Iowa	WL	SX	Nick Chick	4	4	4	3	4	2	2	2	2	4
H & N, Wash. (Reimer's, Kan.)		Kan.	WL	SX	Nick Chick	1	2	3	2	1	3	3	2	2	1
H & N, Wash. (Lowry, Minn.)		Minn.	WL	SX	Nick Chick	3	2	1	3	1	2	3	3	3	3
H & N, Wash. (Hecht's, N. Y.)		CNY	WL	SX	Nick Chick	3	3	2	2	2	3	3	3	2	3
H & N, Wash. (Castlebury, N. C.)		N. C.	WL	SX	Nick Chick	3	2	2	2	1	4	4	3	1	3
H & N, Wash. (Erving's, Tenn.)		Tenn.	WL	SX	Nick Chick	2	2	2	3	3	2	1	2	1	4
Atwood, Texas		Texas	WL	SX	Nick Chick	4	4	3	3	2	3	3	4	2	3
Vance, Texas		Texas	WL	SX	Nick Chick	3	3	3	2	1	2	3	2	2	3
Williams, Texas		Texas	WL	SX	Nick Chick	3	3	3	1	1	3	3	2	2	1
H & N, Wash. (Slette, Wisc.)		Wisc.	WL	SX	Nick Chick	3	3	3	2	3	3	3	3	2	4
Heisdorf & Nelson Farms, Kirkland, Washington															
H & N, Wash. (H & N, Calif.)		Calif.	Synx WL	BX	Breed Cross	3	3	2	4	4	1	2	2	3	2
Heisey Leghorn Farms, Mt. Joy, Pennsylvania															
Heisey, Penna.		Penna.	WL	SX	H-K-Cross	4	4	3	2	3	2	2	3	2	2

RANGE GROUP RANK OF ENTRIES IN RANDOM SAMPLE EGG PRODUCTION TEST (Continued)

ENTRY IDENTIFICATION	TEST	BREEDING	STRAIN OR TRADE NAME	INCOME				EGG PRO- DUCTION (No.)	AGE AT 80% PRO- DUCTION (Days)	GROWING MORTALITY (%)	LAYING MORTALITY (%)	EGG WEIGHT (oz)	LARGE AND EXTRA LARGE EGGS (%)	FEED PER POUND OF EGGS (lbs)	ALBUMEN QUALITY (H.U.)	BLOOD SPOTS (%)
				OVER CHICK FEED COST (\$)	EGG PRO- DUCTION (No.)	AGE AT 80% PRO- DUCTION (Days)	GROWING MORTALITY (%)									
Honegger Breeder Hatchery, Forrest, Illinois																
Honegger, Ill. (Mortensen, Calif.)	Calif.	WL	SX	3	3	4	4	3	3	3	3	3	3	2	2	3
Honegger, Ill.	C. C.	WL	SX	2	1	2	4	2	3	3	3	3	3	2	2	2
Browder, Fla.	Fla.	WL	SX	2	2	2	3	1	3	3	3	3	3	3	3	3
Pine Air, Fla.	Fla.	WL	SX	2	3	2	2	3	3	3	3	3	2	2	2	3
Honegger, Ill.	Mo.	WL	SX	2	2	2	2	2	3	3	3	3	2	2	3	2
Honegger, Ill. (Golden Egg, N. J.)	N. J.	WL	SX	3	2	2	2	2	3	3	3	3	2	2	3	1
Honegger, Ill. (Kimball, N. Y.)	CNY	WL	SX	3	3	3	3	3	3	3	3	3	3	3	3	3
Honegger, Ill.	R. I.	WL	SX	2	1	2	3	2	3	3	3	3	3	1	3	3
Honegger, Ill. (Crumley, Tenn.)	Tenn.	WL	SX	3	3	3	3	3	3	3	3	2	2	3	3	2
Honegger, Ill.	Texas	WL	SX	2	2	2	1	2	2	3	3	2	3	1	2	3
Honegger, Ill. (Sunnyside, Wisc.)	Wisc.	WL	SX	2	2	3	2	3	3	3	3	3	3	2	2	3
Honegger Breeder Hatchery, Forrest, Illinois																
Honegger, Ill.	N. H.	SynxWL	BX	3	2	2	2	3	4	3	3	4	4	2	4	3
Honegger, Ill. (FCX, N. C.)	N. C.	SynxWL	BX	2	2	1	4	2	4	2	4	4	4	2	4	3
Honegger, Ill. (Depies, Wisc.)	Wisc.	SynxWL	BX	2	1	2	2	2	3	2	4	3	3	2	4	2
Hubbard Farms, Walpole, New Hampshire																
Hubbard, N. H.	N. H.	SynxNH	BX	2	2	2	1	3	3	3	3	3	3	2	2	1
Hubbard, N. H. (Hubbard, N. C.)	N. C.	SynxNH	BX	2	2	2	3	2	3	2	2	3	2	2	2	1
Hubbard, N. H.	Penna.	SynxNH	BX	4	4	2	3	4	2	2	2	2	2	4	2	3
Hy-Line Poultry Farms, Des Moines, Iowa																
Hy-Line, Iowa (Poehlmann, Calif.)	Calif.	INX	Hy-Line 934-D	2	3	1	1	3	1	3	3	1	2	1	4	2
Hy-Line, Iowa	C. C.	INX	Hy-Line 934-D	2	2	1	4	2	1	4	2	1	1	1	4	1
Wallace, Fla.	Fla.	INX	Hy-Line 934-D	3	3	3	2	3	3	2	3	2	3	2	4	1
Corrigan Gonzalez, Fla.	Fla.	INX	Hy-Line 934-D	3	3	3	1	3	3	1	3	1	1	2	3	1
Hy-Line, Iowa (Coombs, Kan.)	Kan.	INX	Hy-Line 934-D	2	3	3	3	1	1	1	1	1	1	1	4	2
Hy-Line, Iowa (Hy-Line, Minn.)	Minn.	INX	Hy-Line 934-D	2	2	2	1	1	1	1	1	1	1	1	4	2
Hy-Line, Iowa	Mo.	INX	Hy-Line 934-D	3	3	3	2	1	2	2	2	2	2	3	3	1
Hy-Line, Iowa (Hy-Line, Johnson, Io)	N. J.	INX	Hy-Line 934-D	2	3	3	2	4	1	1	1	1	1	2	3	3
Hy-Line, Iowa (Tar Hill Chicks, NC)	N. C.	INX	Hy-Line 934-D	3	3	2	3	3	2	3	3	2	2	2	4	2
Hy-Line, Iowa	R. I.	INX	Hy-Line 934-D	4	4	3	4	3	2	3	3	2	2	3	3	2
Hy-Line, Iowa (Blanton Smith, Tenn.)	Tenn.	INX	Hy-Line 934-D	3	3	2	2	2	1	2	2	1	1	2	4	1
Hy-Lay, Texas	Texas	INX	Hy-Line 934-D	2	3	4	2	4	1	1	1	1	1	1	3	2
Johnson, Texas	Texas	INX	Hy-Line 934-D	3	2	2	1	2	1	2	1	1	1	2	4	1



RANGE GROUP RANK OF ENTRIES IN RANDOM SAMPLE EGG PRODUCTION TEST (Continued)

ENTRY IDENTIFICATION	TEST	BREEDING	STRAIN OR TRADENAME	INCOME OVER FEE AND CHICK COST (\$)	EGG PRO- DUCTION (Hens housed)	AGE AT 50% PRO- DUCTION (Days)	GROWING MORTALITY (%)	LAYING MORTALITY (%)	EGG WEIGHT (oz)	LARGE AND EXTRA LARGE EGGS (%)	FEED PER EGG (lbs)	ALBUMEN QUALITY (H.U.)	BLOOD SPOTS (%)
Hy-Line Poultry Farm, Des Moines, Iowa													
Hy-Line, Iowa (Poehlmann, Calif.)	Calif.	INX	Hy-Line 934-H	2	2	3	3	2	2	2	1	4	2
Wallace, Fla.	Fla.	INX	Hy-Line 934-H	1	1	3	1	1	2	2	1	4	1
Hy-Line, Iowa (Hy-Line, Johnston, Io)	Iowa	INX	Hy-Line 934-H	3	3	3	1	2	2	2	1	4	3
Hy-Line, Iowa	Mo.	INX	Hy-Line 934-H	2	1	3	3	2	2	2	1	4	1
Hy-Line, Iowa	Tenn.	INX	Hy-Line 934-H	2	3	3	3	3	2	1	1	4	1
Kazmeier, Texas	Texas	INX	Hy-Line 934-H	2	2	3	2	1	1	1	1	4	1
Ideal Poultry Breeding Farm, Inc., Cameron, Texas	Mo.	Synx WL BX	Ideal 236	2	1	3	3	2	3	3	2	3	1
Jordan, Va. (Ideal, Texas)	Texas	Synx WL BX	Ideal 236	2	2	2	2	3	2	2	2	4	2
Ideal, Texas	Wisc.	Synx WL BX	Ideal 236	1	1	2	1	2	2	2	1	3	2
Ideal Poultry Breeding Farm, Cameron, Texas													
Ideal, Texas	Calif.	WL	H-3-W-2	3	3	3	3	1	3	2	3	3	4
Intercontinental, Fla.	Fla.	WL	H-3-W-2	3	4	4	3	4	1	1	2	3	2
Ideal, Texas	Iowa	WL	H-3-W-2	3	4	4	4	2	2	2	3	3	1
Ideal, Texas (Jack Frost, Minn.)	Minn.	WL	H-3-W-2	3	4	2	1	3	2	2	3	2	2
Ideal, Texas	Mo.	WL	H-3-W-2	2	2	3	3	2	3	2	2	3	1
Ideal, Texas	N.J.	WL	H-3-W-2	1	2	4	3	3	3	2	1	3	1
Ideal, Texas	CNY	WL	H-3-W-2	2	2	3	1	2	2	2	2	3	4
Ideal, Texas	N.C.	WL	H-3-W-2	3	3	2	4	3	2	2	3	3	3
Ideal, Texas	R.I.	WL	H-3-W-2	2	3	4	2	4	3	2	1	2	3
Ideal, Texas	Texas	WL	H-3-W-2	3	3	4	3	1	2	2	3	2	4
Owens, Ga. (Ideal, Texas)	Texas	WL	H-3-W-2	4	4	4	2	2	3	3	4	3	1
Ideal, Texas (Jack Frost, Minn.)	Wisc.	WL	H-3-W-2	4	4	3	3	3	3	2	4	3	4
Kerr, Dr., Hatcheries, Minnesota, Minnesota	Calif.	WL	Kerr's 409 C	3	2	1	2	2	1	1	3	2	4
Dr. Kerr, Minn.	Mo.	WL	Kerr's 409 C	3	2	3	2	3	2	2	3	2	2
Kerr, Dr., Hatcheries, Inc., Minnesota, Minnesota	Minn.	INX	P-K 26	2	1	2	3	2	2	2	2	2	3
Kerr, Minn.	Wisc.	INX	P-K 26	3	3	2	2	2	2	2	3	2	2
Keystone Poultry Breeding Farm, Terre Hill, Penna.	N.J.	WL	Park's Keystone	1	1	2	2	2	2	2	1	4	3
Parks, Penna. (Keystone, Penna.)	Mo.	WL	Keystone B-1	2	2	2	2	2	2	2	3	3	2
Keystone Poultry Breeding Farm, Terre Hill, Penna.	CNY	WL	Keystone B-1	2	2	2	1	2	2	2	3	3	3
Parks, Penna.	Penna.	WL	Keystone B-1	3	3	2	1	3	3	3	3	3	4

RANGE GROUP RANK OF ENTRIES IN RANDOM SAMPLE EGG PRODUCTION TEST (Continued)

ENTRY IDENTIFICATION		TEST	BREEDING	STRAIN OR TRADENAME	INCOME AND CHICK CDST	EGG PRO- DUCTION (Hens housed)	AGE AT 50% PRO- DUCTION (Days)	GROWING MORTALITY (%)	LAYING MORTALITY (%)	EGG WEIGHT (oz)	LARGE AND EXTRA LARGE EGGS (%)	FEED PER POUND OF EGGS (lbs)	ALBUMEN QUALITY (H.U.)	BLOOD SPOTS (%)	
Keystone Poultry Breeding Farm, Terre Hill, Penna.		Penna.	WL	SX	K-1700	1	1	3	1	1	2	2	1	4	1
Keystone, Penna.															
Kimber Farms, Inc., Fremont, California															
Ariz. State, Ariz.			WL	SX	Kimber K 137	2	1	3	3	1	4	4	4	4	1
Kimber, Calif. (Kimber, Pomona, Calif.)		Calif.	WL	SX	Kimber K 137	1	2	2	1	1	2	2	1	1	2
Kimber, Calif.		C. C.	WL	SX	Kimber K 137	1	1	1	2	2	3	2	1	1	1
Fla. State, Fla.		Fla.	WL	SX	Kimber K 137	2	3	1	1	1	3	3	3	1	2
Miami International, Fla.		Fla.	WL	SX	Kimber K 137	1	1	1	2	2	3	3	2	1	2
Kimber, Calif. (Cook's, Iowa)		Iowa	WL	SX	Kimber K 137	3	2	4	2	3	3	3	1	1	1
Kimber, Calif. (B & C, Kansas)		Kan.	WL	SX	Kimber K 137	1	2	2	1	2	1	2	1	3	3
Kimber, Calif. (Meadowview, Wisc.)		Minn.	WL	SX	Kimber K 137	1	1	2	2	1	3	3	1	2	2
Kimber, Calif. (Mo. Valley Kimber- chicks, Mo.)		Mo.	WL	SX	Kimber K 137	2	2	2	1	2	2	2	2	1	2
Kimber, Calif. (Dover Farms, N. J.)		N. J.	WL	SX	Kimber K 137	3	4	2	3	3	2	2	2	1	3
Kimber, Calif. (Marshall Bros. N. Y.)		CNY	WL	SX	Kimber K 137	2	1	2	3	2	3	3	1	1	1
Kimber, Calif. (Hubbard, N. C.)		N. C.	WL	SX	Kimber K 137	2	2	2	1	2	2	2	1	1	2
Kimber, Calif. (Moyer, Penna.)		Penna.	WL	SX	Kimber K 137	1	1	2	1	1	3	3	2	1	1
Kimber, Calif. (Hubbard, N. H.)		R. I.	WL	SX	Kimber K 137	2	3	1	1	3	3	3	1	1	3
Kimber, Calif. (Nicholas, Tenn.)		Tenn.	WL	SX	Kimber K 137	3	3	3	3	2	3	3	3	1	4
Kimber, Calif.		Texas	WL	SX	Kimber K 137	3	3	2	3	3	3	3	3	1	1
Western, Texas		Texas	WL	SX	Kimber K 137	2	3	3	2	1	2	1	2	1	1
Kimber, Calif. (Meadowview, Wisc.)		Wisc.	WL	SX	Kimber K 137	2	2	2	1	3	3	2	2	1	3
Kimber Farms, Inc., Fremont, Calif.		Calif.	WL	SX	Kimber K 141	2	2	2	1	1	3	2	3	3	3
Kimber, Calif. (Kimber, Pomona, Calif.)															
Kimber Farms, Inc., Fremont, Calif.															
Kimber, Calif. (Star Kimber, B. C.)		B. C.	WL	SX	Kimber K 155	1	1	1	1	1	2	3	2	1	1
Kimber, Calif. (Kimber, Sanger, Calif.)		Calif.	WL	SX	Kimber K 155	2	2	2	1	2	3	3	2	1	2
Bloomingtondale, Fla.		Fla.	WL	SX	Kimber K 155	2	2	2	4	2	3	3	2	1	3
Kimber, Calif. (Mo. Valley Kimber- chicks, Mo.)		Mo.	WL	SX	Kimber K 155	3	2	2	3	3	3	3	3	2	1
Kimber, Calif. (Hubbard, Penna.)		CNY	WL	SX	Kimber K 155	2	1	1	2	1	3	3	1	1	1
Kimber, Calif. (Hubbard, Penna.)		Penna.	WL	SX	Kimber K 155	2	2	2	1	3	3	3	2	1	2
Kimber Farms, Inc., Fremont, California															
Kimber, Calif.		N. H.	BX	Kimber K 188	4	4	2	3	4	3	3	3	3	1	1
Kimber Farms, Inc., Fremont, California															
Kimber, Calif. (Wilke's, Wisc.)		Wisc.	Syn x WL	BX	Kimber K 222	3	2	2	1	2	2	3	3	3	3

RANGE GROUP RANK OF ENTRIES IN RANDOM SAMPLE EGG PRODUCTION TEST (Continued)

ENTRY IDENTIFICATION		TEST	BREEDING	STRAIN OR TRADE NAME	INCOME OVER FEED COST CHICK (\$)	EGG PRO- DUCTION (No.)	AGE AT 50% PRO- DUCTION (Days)	GROWING MORTALITY (%)	LAYING MORTALITY (%)	EGG WEIGHT (oz)	LARGE AND EXTRA LARGE EGGS (%)	FEED PER POUND OF EGGS (lbs)	ALBUMEN QUALITY (H.U.)	BLOOD SPOTS (%)
Kingstowne Poultry Farm, N. Kingston, R. I.		R. I.	RIR x WR	BX	Buff Sex Link	4	4	3	2	3	3	4	2	1
Kingstowne, R. I.														
Klongland Hatchery, Stoughton, Wisconsin		Wisc.	CG x WL	BX	K Cross	2	2	1	3	2	2	2	3	1
Klongland, Wisc.														
Lawton, A. C. & Sons, Foxboro, Massachusetts		CNY	WPR	PS	Lawton	3	3	2	2	2	3	3	3	3
Lawton, Mass.														
Lawton, A. C. & Sons, Foxboro, Massachusetts														
Lawton, Mass.														
Lawton, Mass.														
Lawton, Mass.														
Lawton, Mass.														
Manitoba Dairy & Poultry Coop, Winnipeg, Manitoba														
ROP Breeders', Man.		Alta.	WL	SX	Keyline 110 C	4	3	1	1	2	3	4	1	3
ROP Breeders', Man.		B. C.	WL	SX	Keyline 110 C	2	3	1	3	4	2	3	2	1
ROP Breeders', Man.		C. C.	WL	SX	Keyline 110 C	2	3	2	3	2	3	2	1	2
ROP Breeders', Man.		N. B.	WL	SX	Keyline 110 C	3	3	2	2	1	4	2	1	3
Manitoba Dairy & Poultry Coop, Winnipeg, Manitoba														
ROP Breeders', Man.		C. C.	LS x RIR	BX	Keyline 340	2	2	1	3	3	3	3	2	3
Nelson, George F., Truro, Nova Scotia														
Nelson, N. S.		C. C.	RIR (LS x RIR)	BX	Sex Link	2	2	2	2	3	2	2	2	4
Nelson, N. S.		N. B.	RIR (LS x RIR)	BX	Sex Link	3	3	2	2	3	2	4	2	4
Noble Bros., Orangeville, Ontario														
Noble, Ont.		C. C.	WL	SX	Noble N-60	2	2	2	1	2	4	2	3	4
No. Central Regional Poultry Br. Lab., Lafayette, Indiana														
N. Central Regional, Ind.		Calif.	WL	PS	Reg. Cornell Contr.	4	4	4	1	4	4	4	2	3
N. Central Regional, Ind.		Fla.	WL	PS	Reg. Cornell Contr.	4	4	3	3	4	4	4	3	3
N. Central Regional, Ind.		Mo.	WL	PS	Reg. Cornell Contr.	4	3	4	4	2	4	4	3	3
N. Central Regional, Ind.		CNY	WL	PS	Reg. Cornell Contr.	3	2	3	2	3	4	4	3	3
N. Central Regional, Ind.		Tenn.	WL	PS	Reg. Cornell Contr.	4	3	3	2	3	4	4	3	4
N. Central Regional, Ind.		Texas	WL	PS	Reg. Cornell Contr.	4	4	4	4	4	4	4	2	4
N. Central Regional, Ind.		Wisc.	WL	PS	Reg. Cornell Contr.	4	4	3	4	4	4	4	3	1
No. Central Regional Poultry Br. Lab., Lafayette, Indiana														
N. Central Regional, Ind.		R. I.	RIR	PS	Reg. Red Control	4	4	3	1	3	4	4	2	2

RANGE GROUP RANK OF ENTRIES IN RANDOM SAMPLE EGG PRODUCTION TEST (Continued)

ENTRY IDENTIFICATION			TEST	BREEDING		STRAIN OR TRADENAME	INCOME AND FEED COST (\$)	EGG PRO- DUCTION (Hens housed)	AGE AT 50% PRO- DUCTION (Days)	GROWING MORTALITY (%)	LAYING MORTALITY (%)	EGG WEIGHT (oz)	LARGE AND EXTRA LARGE EGGS (%)	FEED POUNDS PER EGG	ALBUMEN QUALITY (H.U.)	BLOOD SPOTS (%)
No. Central Regional Poultry Br. Lab., Lafayette, Indiana																
N. Central Regional, Ind.			Calif.	RIR x WL	BX	Reg. RedxCornell	4	4	1	4	2	4	4	4	3	3
Oak Crest Hatcheries, Inc., Jacksonville, Fla.																
Oak Crest, Fla.			Fla.	RIR x BPR	BX	Sex Link	3	4	4	2	3	1	1	4	2	4
Pennsylvania-Indiana Farm Bureau, Grantville, Penna.																
Penna.-Ind. Farm Bureau, Penna.			CNY	WL	SX	Princess 55	2	2	2	2	3	4	3	2	1	2
Penna.-Ind. Farm Bureau, Penna.			N. C.	WL	SX	Princess 55	3	3	3	4	3	4	4	2	1	4
Penna.-Ind. Farm Bureau, Penna.			Penna.	WL	SX	Princess 55	3	2	4	3	2	3	3	3	1	1
Penna.-Ind. Farm Bureau, Ind.			Wisc.	WL	SX	Princess 55	3	3	3	2	3	3	3	3	1	1
Pennsylvania-Indiana Farm Bureau, Grantville, Penna.																
Penna.-Ind. Farm Bureau, Penna.			Penna.	WL	SX	Dutchess 60	2	2	3	2	3	3	3	2	1	2
Penna.-Ind. Farm Bureau, Ind.			Tenn.	WL	SX	Dutchess 60	2	2	3	3	2	3	3	2	1	3
Pennsylvania-Indiana Farm Bureau, Grantville, Penna.																
Penna.-Ind. Farm Bureau, Ind.			Mo.	WL	SX	Countess 75	3	4	3	2	4	3	3	2	1	3
Penna.-Ind. Farm Bureau, Ind.			Wisc.	WL	SX	Countess 75	2	1	3	4	2	2	2	1	1	2
Randall Hatchery & Breeding Farm, Montclair, California																
Randall, Calif.			Calif.	CGxWL	BX	Randall Grayx Leg.	2	2	1	1	3	2	3	2	4	1
Rapp Leghorn Farm, Farmingdale, N. J.																
Rapp, N. J.			N. J.	WL	SX	Rapp Linecross	1	2	4	1	1	2	1	2	2	2
Rapp, N. J. (Kostinen, N. Y.)			CNY	WL	SX	Rapp Linecross	3	3	3	4	3	1	1	3	2	3
Raynor, Ralph E., Charlettetown, Prince Edward Island																
Raynor, P. E. I.			C. C.	WL	SX	Raynor R 63	3	3	4	2	3	3	3	4	2	3
Raynor, P. E. I.			N. B.	WL	SX	Raynor R 63	4	4	3	2	2	3	3	4	3	4
Riddle Spring Poultry Farm, Manchester, N. H.																
Riddle Spring, N. H.			N. H.	RIR x WR	BX	Super-Triway	2	3	3	3	2	2	2	3	2	4
Sanders Chick Hatchery, Moncton, New Brunswick																
Sanders, N. B.			N. B.	WL	SX	Keystones	4	4	4	3	3	4	4	3	1	1
Schuyler Poultry Farms, LeRoy, New York																
Schuyler, N. Y.			CNY	WL	SX	Egg Champs	3	4	4	3	2	2	2	3	3	3
Schuyler, N. Y.			Penna.	WL	SX	Egg Champs	3	3	3	3	2	4	4	3	3	4
Schuyler, N. Y.			Tenn.	WL	SX	Egg Champs	3	3	3	3	3	4	3	3	4	3



RANGE GROUP RANK OF ENTRIES IN RANDOM SAMPLE EGG PRODUCTION TEST (Continued)

ENTRY IDENTIFICATION		TEST	BREEDING	STRAIN OR TRADENAME	INCOME OVER FEED AND CHICK COST (\$)	EGG PRO- DUCTION (item housed)	AGE AT % PRO- DUCTION (Days)	GROWING MORTALITY (%)	LAYING MORTALITY (%)	EGG WEIGHT (oz)	LARGE AND EXTRA LARGE EGGS (%)	FEED PER POUNDED EGG (lbs)	ALBUMEN QUALITY (H.U.)	BLOOD SPOTS (%)
Shaver, Ont.	Shaver, Ont.	Shaver Poultry Breeding Farm, Galt, Ontario, Canada	WL	SX	Starcross 288	1	1	1	2	3	2	1	2	3
Shaver, Ont.	Shaver, Ont.	Alta.	WL	SX	Starcross 288	2	2	2	1	4	3	2	1	3
Shaver, Ont.	Shaver, Ont.	B. C.	WL	SX	Starcross 288	2	1	3	4	2	1	1	2	3
Shaver, Ont.	Shaver, Ont.	Calif.	WL	SX	Starcross 288	2	2	3	3	3	1	1	2	2
Shaver, Ont.	Shaver, Ont.	C. C.	WL	SX	Starcross 288	3	2	3	4	2	1	1	2	2
Shaver, Ont.	Shaver, Ont.	Iowa	WL	SX	Starcross 288	1	1	1	1	2	2	1	1	2
Shaver, Ont.	Shaver, Ont.	Minn.	WL	SX	Starcross 288	2	2	3	2	3	2	1	2	3
Shaver, Ont.	Shaver, Ont.	Mo.	WL	SX	Starcross 288	1	1	1	1	2	2	1	2	2
Shaver, Ont.	Shaver, Ont.	N. B.	WL	SX	Starcross 288	1	1	1	1	2	2	1	2	2
Shaver, Ont.	Shaver, Ont.	N. J.	WL	SX	Starcross 288	1	1	1	4	2	2	2	1	2
Shaver, Ont.	Shaver, Ont.	CNY	WL	SX	Starcross 288	1	1	2	3	3	2	1	1	3
Shaver, Ont.	Shaver, Ont.	N. C.	WL	SX	Starcross 288	1	1	1	1	2	2	2	1	2
Shaver, Ont.	Shaver, Ont.	Penna.	WL	SX	Starcross 288	1	1	2	2	1	3	2	1	4
Shaver, Ont.	Shaver, Ont.	Tenn.	WL	SX	Starcross 288	1	1	2	2	3	1	1	1	3
Shaver, Ont.	Shaver, Ont.	Texas	WL	SX	Starcross 288	2	2	2	4	3	2	2	2	2
Shaver, Ont.	Shaver, Ont.	Texas	WL	SX	Starcross 288	1	1	2	3	2	1	1	1	1
Shaver, Ont.	Shaver, Ont.	Texas	WL	SX	Starcross 288	2	2	3	2	2	2	2	2	4
Shaver, Ont.	Shaver, Ont.	Wisc.	WL	SX	Starcross 288	2	2	2	1	3	3	2	2	2
Shaver, Ont.	Shaver, Ont.	Shaver Poultry Breeding Farm, Galt, Ontario, Canada	WL	SX	Starcross 288	3	2	1	2	2	2	2	3	3
Shaver, Ont.	Shaver, Ont.	C. C.	WL	SX	Starcross 292	4	4	3	1	3	2	2	3	3
Shaver, Ont.	Shaver, Ont.	Mo.	WL	SX	Starcross 292	4	4	3	1	3	2	2	4	1
Shaver, Ont.	Shaver, Ont.	CNY	WL	SX	Starcross 292	4	4	3	4	3	2	2	4	3
Shaver, Ont.	Shaver, Ont.	Penna.	WL	SX	Starcross 292	3	3	2	1	2	3	2	3	3
Shaver, Ont.	Shaver, Ont.	R. I.	WL	SX	Starcross 292	4	4	1	3	4	3	2	3	4
Smyth, James, Nanaimo, British Columbia	Smyth, B. C.	B. C.	WL	SX	Smyth 501 x 547	4	4	4	4	3	4	4	3	4
St. Augustin Cooperative Hatchery, St. Augustin, Quebec	St. Augustin, Quebec	C. C.	WL	SX	Corvette A1	2	2	3	1	3	2	2	2	3
St. Augustin, Quebec	St. Augustin, Quebec	N. B.	WL	SX	Corvette A1	3	3	3	2	3	3	3	2	3
St. Augustin Cooperative Hatchery, St. Augustin, Quebec	St. Augustin, Quebec	C. C.	WL	SX	Corvette 5X	3	3	4	4	2	2	1	3	1
Starline Breeders Hatchery, Saskatoon, Saskatchewan	Starline, Sask.	Alta.	CG x WL	BX	Pearlette	4	4	2	2	4	4	4	4	2
Starline, Sask.	Starline, Sask.	B. C.	CG x WL	BX	Pearlette	3	2	3	2	1	2	2	3	4
Starline, Sask.	Starline, Sask.	C. C.	CG x WL	BX	Pearlette	2	2	2	1	2	3	3	2	4
Starline, Sask.	Starline, Sask.	N. B.	CG x WL	BX	Pearlette	3	3	2	3	2	2	3	3	4
Starline, Sask.	Starline, Sask.	Tenn.	CG x WL	BX	Pearlette	3	3	2	2	2	2	2	3	4

RANGE GROUP RANK OF ENTRIES IN RANDOM SAMPLE EGG PRODUCTION TEST (Continued)

ENTRY IDENTIFICATION	TEST	BREEDING	STRAIN OR TRADENAME	INCOME OVER FEED COST CHICK (¢)	EGG PRO- DUCTION (No.)	AGE AT LAYS PRO- DUCTION (Weeks)	GROWING MORTALITY (%)	LAYING MORTALITY (%)	EGG WEIGHT (oz)	LARGE AND EXTRA LARGE (%)	FEED POUND PER EGG (lbs)	ALBUMEN QUALITY (H.U.)	BLOOD SPOTS (%)
Starline Breeders Hatchery, Saskatoon, Saskatchewan	C. C.	CG x WL BX	Pearlette A	3	3	2	4	2	3	3	3	3	1
Starline, Sask.													
Stever Hatchery, Huntingdon, Pennsylvania	N. J.	WL SX	Stever SC-300	2	2	3	3	3	1	4	4	2	3
Stever, Penna.													
Garrison, Penna.(Stever, Penna.)	N. C.	WL SX	Stever SC-300	3	3	4	2	3	3	4	4	3	2
Stever, Penna.	Penna.	WL SX	Stever SC-300	2	2	3	2	2	3	3	2	2	3
Stone's Poultry Farm, Dinuba, California													
Sun Valley, Ariz.	Ariz.	WL SX	Stone's H 56	1	1	1	1	1	4	4	3	3	1
Stone, Calif. (Napier, B. C.)	B. C.	WL SX	Stone's H 56	1	1	1	1	1	3	3	1	1	2
Stone, Calif.	Calif.	WL SX	Stone's H 56	2	2	2	1	2	4	3	2	2	1
Poultry Prod., Fla.	Fla.	WL SX	Stone's H 56	3	3	1	2	1	3	3	3	3	1
Stone, Calif. (Hoover, Iowa)	Iowa	WL SX	Stone's H 56	1	1	2	1	1	3	3	3	3	1
Stone, Calif. (Hoover, Iowa)	Minn.	WL SX	Stone's H 56	2	2	2	1	2	4	4	2	2	2
Stone, Calif.	N. J.	WL SX	Stone's H 56	3	2	2	2	3	3	3	3	4	4
Sturtevant Farms, Inc., Halifax, Massachusetts													
Sturtevant, Mass.	N. H.	RIR x WPR BX	Golden Sex Link	2	2	3	1	2	2	1	2	2	3
Sunnyside Hatchery, Watertown, Wisconsin													
Sunnyside, Wisc.	Wisc.	CG x WL BX	Wisco White	3	3	2	3	4	4	4	3	4	1
Townline Poultry Farm, Zeeland, Michigan													
Townline, Mich.	Mo.	WL SX	Townline SC 30	1	1	2	2	2	2	2	2	4	2
Townline, Mich.	Penna.	WL SX	Townline SC 30	1	2	2	3	3	3	3	1	2	2
Townline, Mich.	Wisc.	WL SX	Townline SC 30	3	3	2	3	3	2	2	3	3	3
Triska, Eric, Edmonton, Alberta													
Triska, Alta.	C. C.	WL SX	Belmont 292	2	2	3	3	3	1	1	2	3	3
Triska, Eric, Edmonton, Alberta													
Triska, Alta.	Alta.	WL SX	Belmont 292 A	2	2	2	3	3	4	4	2	1	4
Triska, Alta.	C. C.	WL SX	Belmont 292 A	3	2	2	2	2	3	3	2	2	3
Triska, Eric, Edmonton, Alberta													
Triska, Alta.	Alta.	WL SX	Belmont 292 B	3	3	4	2	2	4	3	4	1	4
University of Tennessee, Knoxville, Tennessee													
Univ. of Tenn., Tenn.	Tenn.	WL PS	Pure Line	4	4	3	1	3	4	4	4	1	3
Vriends, Arnold, Coverhead Rd., Prince Edward Island													
Vriends, P.E.I.	C. C.	WL SX	Vriends V-1	3	2	2	1	2	4	4	3	2	2
Vriends, Arnold, Coverhead Rd., Prince Edward Island													
Vriends, P.E.I.	C. C.	WL SX	Vriends V-2	3	2	3	4	2	3	3	3	2	3

RANGE GROUP RANK OF ENTRIES IN RANDOM SAMPLE EGG PRODUCTION TEST (Continued)

ENTRY IDENTIFICATION		TEST	BREEDING	STRAIN OR TRADE NAME	INCOME OVER FEED AND CHICK COST (\$)	EGG PRO- DUCTION (Hen housed)	AGE AT PRO- DUCTION (Days)	GROWING MORTALITY (%)	LAYING MORTALITY (%)	EGG WEIGHT (oz)	LARGE AND EXTRA LARGE EGGS (%)	EGGS PROD PER HEN PER DAY (lbs)	ALBUMEN QUALITY (H.U.)	BLOOD SPOTS (%)
Warren, J. J., Inc., North Brookfield, Massachusetts														
Warren, Mass. (Jack Frost, Minn.)	Minn.	WL	SX	Warren Darby DX	4	4	4	4	4	3	2	4	3	3
Warren, Mass.	R. I.	WL	SX	Warren Darby DX	2	2	4	1	2	3	3	1	3	4
Warren, Mass. (Jack Frost, Minn.)	Wisc.	WL	SX	Warren Darby DX	3	3	4	4	2	2	2	3	2	2
Warren, J. J., North Brookfield, Massachusetts														
Warren, Mass. (Redline, B. C.)	B. C.	RIRxRIW BX	Sex-Sal-Link-F		1	2	2	1	2	1	1	2	2	3
Warren, Mass.	Mo.	RIRxRIW BX	Sex-Sal-Link-F		2	3	3	4	1	2	1	3	2	4
Law, N. B. (Warren, Mass.)	N. B.	RIRxRIW BX	Sex-Sal-Link-F		2	2	2	3	2	2	2	3	3	1
Warren, Mass.	N. H.	RIRxRIW BX	Sex-Sal-Link-F		1	2	4	2	1	2	1	2	2	3
Warren, Mass.	CNY	RIRxRIW BX	Sex-Sal-Link-F		1	1	3	1	1	2	2	2	2	1
Warren, Mass.	R. I.	RIRxRIW BX	Sex-Sal-Link-F		1	1	4	3	1	2	1	2	3	1
Warren, Mass. (Swift & Co., Iowa)	Wisc.	RIRxRIW BX	Sex-Sal-Link-F		2	3	3	1	2	1	1	3	2	3
Weaver Hatchery, Lititz, Pennsylvania														
Weaver, Penna.	Penna.	WL	SX	Weaver K Cross	3	2	3	1	1	3	3	3	2	3
Webster Poultry Farm, Auburn, New York														
Webster, N. Y.	CNY	RIR	SX	New Red	3	3	3	3	3	3	3	4	2	3
Welp's Breeding Farm, Bancroft, Iowa														
Welp, Iowa (Childer's, Calif.)	Calif.	WL	SX	Welp Line 937	2	2	3	4	2	1	1	1	3	2
Welp, Iowa	Iowa	WL	SX	Welp Line 937		1	3	2	1	3	3	3	3	4
Welp, Iowa	Kan.	WL	SX	Welp Line 937	2	4	3	1	4	3	3	3	3	1
Welp, Iowa (Lundborg's, Minn.)	Minn.	WL	SX	Welp Line 937	3	3	1	3	3	2	2	3	2	1
Welp, Iowa	CNY	WL	SX	Welp Line 937	3	3	2	3	3	3	3	2	3	2
Welp, Iowa	Tenn.	WL	SX	Welp Line 937	1	1	3	2	1	2	1	1	3	2
Welp, Iowa	Texas	WL	SX	Welp Line 937	2	2	2	3	1	3	3	1	2	3
Welp, Iowa (Elkhorn, Wisc.)	Wisc.	WL	SX	Welp Line 937	2	3	3	4	2	2	2	2	3	3
Wood Poultry Breeding Farm, Pomona, California														
Wood, Calif.	Calif.	AW	BX	Austra-White	3	3	4	2	1	3	3	3	2	1

OFFICIAL STANDARD EGG LAYING TESTS  
1964-65

INTRODUCTION

Missouri - Missouri National Egg Laying Contest, Mountain Grove, Charles McElyea, Supervisor

New York - New York State Egg Laying Test, Farmingdale, Long Island, R. R. Stockbridge, Supervisor

Two official Standard Egg Laying Tests operate under a uniform set of rules which were adopted by and are revised by the Council of American Official Poultry Tests. It must be recognized that these rules cover only certain phases of the test procedures. Such things as feeding programs, lighting, and other management details are determined by the local test supervisor.

The point system that is used to determine the average number of points per bird is based on the egg weight of the individual eggs. The following chart gives the point value assigned to eggs of varying weights:

Wt. of Egg in Oz. per Doz.	Point Value Assigned	Wt. of Egg in Oz. per Doz.	Point Value Assigned
18	0.70	23	0.95
19	.75	24	1.00
20	.80	25	1.05
21	.85	26	1.10
22	.90		

Any egg weighing less than 17 ounces per dozen is not recorded. Any egg weighing more than 26 ounces per dozen is not given any additional point credit.

MISSOURI NATIONAL EGG LAYING CONTEST  
(Descriptive Summary)

Cooperators in the Missouri National Egg Laying Contest send in between 50 and 60 chicks within one week of their hatch date in March. These birds are brooded intermingled and reared on range. All birds are vaccinated for Fowl Pox, Newcastle, Bronchitis and Laryngotracheitis. The birds are approximately 25 weeks of age when they enter the laying house. Forty birds from each entry are housed, the same breeding or variety to the pen, which allows about three square feet per bird. All the pens are trapnested seven days per week. At the end of one month of trapnesting, the extra birds (all over 30) are removed. The trapnesting records are used to cull the poorest producers from an entry. During the contest, all birds are treated as nearly alike as possible by having identical pens and facilities and being fed the same feed. Fresh water, grit and oyster shell are provided at all times. An autopsy is performed by a licensed veterinarian on all dead birds.

During the first two months of the Missouri National Egg Laying Test, all of the eggs laid are weighed individually; points are assigned according to the chart above, and they are recorded. At the end of each of the first two months when all eggs laid are being weighed, the total points for a hen are determined by the addition of the points assigned to each egg which she laid during the month. After the first two months, eggs are weighed only three days per month, but the values in points which are assigned are projected to include the total number of eggs laid that month.

FIFTY-FOURTH MISSOURI NATIONAL EGG LAYING CONTEST  
MISSOURI STATE POULTRY EXPERIMENT STATION  
MOUNTAIN GROVE, MISSOURI 1964-65

Owner and Address	Breed	No. of Birds Entered	Points Per Bird	Eggs Per Bird	Percent Mortality	Ave. March Egg Wt.
Cashman Leghorn Farms, Webster, Ky.	SCWL	30	260.44	255.2	16.7	25.06
Cashman Leghorn Farms, Webster, Ky.	SCWL	30	281.29	272.2	13.3	25.70
Colonial Poultry Farms, Pleasant Hill, Mo.	SCWL	30	262.13	254.7	0.0	25.18
Dirkse Leghorn Farm, Zeeland, Michigan	SCWL	30	261.99	257.5	0.0	25.34
Dirkse Leghorn Farm, Zeeland, Michigan	SCWL	30	249.46	238.6	20.0	26.92
Eby's Poultry Farm, Carrollton, Texas	SCWL	30	271.62	264.2	6.7	26.06
Eby's Poultry Farm, Carrollton, Texas	SCWL	30	262.24	256.2	10.0	25.54



Owner and Address	Breed	No. of Birds Entered	Points Per Bird	Eggs Per Bird	Percent Mortality	Ave. March Egg Wt.
Hanson's Pedigreed Leghorns, Corvallis, Oregon	SCWL	30	274.69	273.7	3.3	24.78
Hanson's Pedigreed Leghorns, Corvallis, Oregon	SCWL	30	259.64	263.3	6.7	24.65
Parks Poultry Farm, Altoona, Pennsylvania	SCWL	30	265.38	250.2	13.3	27.09
Parks Poultry Farm, Altoona, Pennsylvania	SCWL	30	257.85	242.6	6.7	26.80
Shaver Poultry Br. Fm., Galt, Ont., Canada	SCWL	30	262.10	254.4	10.0	26.32
Shaver Poultry Br. Fm., Galt, Ont., Canada	SCWL	30	278.55	263.1	6.7	26.60
Shaver Poultry Br. Fm., Galt, Ont., Canada	SCWL	30	271.82	256.8	3.3	25.40
Shaver Poultry Br. Fm., Galt, Ont., Canada	SCWL	30	274.52	259.8	13.3	26.61
TownLine Poultry Farm, Zeeland, Michigan	SCWL	30	274.33	258.4	13.3	27.43
TownLine Poultry Farm, Zeeland, Michigan	SCWL	30	284.08	269.7	10.0	26.41
Cashman Leghorn Farms, Webster, Ky.	Incross	30	290.55	285.4	6.7	25.57
Cashman Leghorn Farms, Webster, Ky.	Incross	30	249.90	238.8	20.0	26.70
Colonial Poultry Farms, Pleasant Hill, Mo.	Crossbred	30	244.51	233.5	0.0	26.25
Colonial Poultry Farms, Pleasant Hill, Mo.	Crossbred	30	266.89	246.0	0.0	29.66
Parks Poultry Farm, Altoona, Pennsylvania	Crossbred	30	252.62	235.4	10.0	27.01
Parks Poultry Farm, Altoona, Pennsylvania	Crossbred	30	242.71	228.8	6.7	27.12
Parks Poultry Farm, Altoona, Pennsylvania	Crossbred	30	258.24	238.6	6.7	28.00
Parks Poultry Farm, Altoona, Pennsylvania	Crossbred	28	179.75	166.3	30.0	27.97
Colonial Poultry Farms, Pleasant Hill, Mo.	NH	30	173.84	171.3	20.0	25.61
Colonial Poultry Farms, Pleasant Hill, Mo.	NH	30	241.52	228.2	3.3	26.61
Colonial Poultry Farms, Pleasant Hill, Mo.	W. Rock	30	185.17	178.9	30.0	26.55

#### NEW YORK STATE EGG LAYING TEST (Descriptive Summary)

Ready-to-lay pullets are received during the last week in September for the opening date of October 1, each year. The test lasts 350 days. All birds are given an anti-stress product in the drinking water for two days following their arrival. All birds are vaccinated for Laryngotracheitis on October 15th each year, and any pens not vaccinated for Fowl Pox are done at the same time. The vaccination is done at night. Birds are treated for worms.

Each compartment in the Test can hold two pens of thirteen birds, plus four extra birds. Extra birds are used as replacements during the first two weeks of the Test, if needed, and if not used, are removed on October 15th. Fresh feed is bought by competitive bid each month. All-mash is used, supplemented with a top grade poultry oats each day. Pellets of all-mash ration are also used. Grit, oyster shell, and fresh water are before the birds at all times.

Average actual egg weights and the percentage production on a hen-day and hen-housed basis are included in the monthly reports. Feed consumption figures are also supplied monthly. Weekly reports include a timely poultry article and the records for the week and to-date. The number of eggs, the point score, percent production, and the percent of large and extra-large eggs laid by each pen for the week are included.

For several years, we have operated an old hen test without force molting. The birds are moved to clean pens and trapnested for 365 days beyond the pullet year.

FORTY-THIRD ANNUAL NEW YORK STATE EGG LAYING TEST  
STATE UNIVERSITY AGRICULTURAL & TECHNICAL INSTITUTE  
FARMINGDALE, L. I., N. Y. 1964-65

Owner and Address	Breed	No. of Birds Entered	Points Per Bird	Eggs Per Bird	Percent Mortality	Ave. Egg Wt.
Cashman Leghorn Farms, Webster, Ky.	SCWL	13	266.29	253.0	7.7	26.52
Cashman Leghorn Farms, Webster, Ky.	SCWL	13	248.89	235.3	30.8	26.74
Cashman Leghorn Farms, Webster, Ky.	SCWL	13	238.95	205.8	46.2	25.15
Colonial Poultry Farms, Pleasant Hill, Mo.	SCWL	13	297.81	277.2	7.7	27.55
Colonial Poultry Farms, Pleasant Hill, Mo.	SCWL	13	279.98	265.2	0.0	26.61
Dirkse Leghorn Farm, Zeeland, Michigan	SCWL	13	247.88	238.0	0.0	26.31
Dirkse Leghorn Farm, Zeeland, Michigan	SCWL	13	217.95	213.4	15.4	25.50
Drake, John W., Skillman, N. J.	SCWL	13	237.33	236.9	7.7	25.43
Foreman Poultry Farm, Lowell, Michigan	SCWL	13	220.61	211.1	0.0	25.52
Foreman Poultry Farm, Lowell, Michigan	SCWL	13	210.38	198.8	23.1	27.65
Hendrickson, H.F. & R.G., Bridgehampton, L.L., N.Y.	SCWL	13	246.10	230.8	0.0	26.63
Hendrickson, H.F. & R.G., Bridgehampton, L.L., N.Y.	SCWL	13	227.58	210.5	0.0	28.84
Parks Poultry Farm, Altoona, Pennsylvania	SCWL	13	266.83	252.0	15.4	28.31
Parks Poultry Farm, Altoona, Pennsylvania	SCWL	13	262.16	249.9	15.4	26.75
Shaver, D., Jr., Galt, Ont., Canada	SCWL	13	311.85	245.1	7.7	27.09
Shaver, D., Jr., Galt, Ont., Canada	SCWL	13	291.06	278.8	0.0	26.08
St. Univ. Agric. & Tech. Coll. Farmingdale, L.I., N.Y.	SCWL	13	232.25	220.6	15.4	26.88
Cashman Leghorn Farms, Webster, Ky.	Incrossbred	13	281.01	262.9	0.0	27.21
Sturtevant Farms, Halifax, Mass.	Barred Rock	13	254.62	251.7	0.0	25.35
Anderson, Ralph W., Hanover, Mass.	Sex Link	13	270.66	253.2	0.0	27.31
Anderson, Ralph W., Hanover, Mass.	Sex Link	13	266.55	246.9	0.0	28.59
Parks Poultry Farm, Altoona, Pennsylvania	Sex Link	13	274.95	257.5	7.7	27.46
Parks Poultry Farm, Altoona, Pennsylvania	Sex Link	13	258.31	240.5	15.4	28.00
Parks Poultry Farm, Altoona, Pennsylvania	Sex Link	13	246.19	233.7	15.4	27.03
Parks Poultry Farm, Altoona, Pennsylvania	Sex Link	13	237.33	226.9	7.7	26.82
Sturtevant Farms, Halifax, Mass.	Sex Link	13	275.44	257.1	0.0	27.08
Sturtevant Farms, Halifax, Mass.	Sex Link	13	268.28	252.6	0.0	27.67
Shaver Poultry Br. Fm., Galt, Ont., Canada	Br. Mothers	13	193.91	184.5	23.1	26.96
Shaver Poultry Br. Fm., Galt, Ont., Canada	Br. Mothers	13	170.81	161.1	7.7	28.14









